

A MANUAL OF HINDU ASTROLOGY

CORRECT CASTING OF
HOROSCOPES

ninth edition

B.V. RAMAN

Works by B. V. RAMAN

1. **ASTROLOGY FOR BEGINNERS**—Teaches Astrology without effort. The best book for beginners. 14th Edition. Rs. 3-75 or Sh. 7-50
2. **A MANUAL OF HINDU ASTROLOGY**—Gives a clear and concise account of the essential principles of Astrology 9th Edition. Rs. 8-25 £ 0-82 postage extra.
3. **BHAVARTHA RATNAKARA**—English Translation with original slokas in Devanagari, exhaustive notes and illustrations. 5th Edition. Rs. 8-25 or Sh. 16-6.
4. **GRAHA AND BHAVA BALAS**—A Guide to Predictive Astrology. Cloth bound. 8th Edition. Rs. 4-50 or Sh. 9.
5. **VARSHAPHAL OR THE HINDU PROGRESSED HOROSCOPE**—Gives an easy method for deciphering yearly res its scientifically. Full cloth bound. 8th Edition. Rs. 7-50 or Sh. 15
6. **HOW TO JUDGE A HOROSCOPE**, Vol. I—Deals exhaustively with Practical Astrology. 6th Edition. Rs. 13-50 or Sh. 27.
7. **AYURVEDA OR THE HINDU SCIENCE OF MEDICINE**—Gives an idea of the grandeur and importance of Ayurveda. 5th Edition. Rs. 2 or Sh. 4.
8. **ASTROLOGY AND MODERN THOUGHT**—The truth of Astrology has been statistically proved, 6th Edition. Rs. 20 or £ 2. Postage extra.
9. **STUDIES IN JAIMINI ASTROLOGY**—Presents the complicated principles contained in the four chapters of Jaiminī in a simple, comprehensive manner with suitable illustrations. 3rd Edition. Rs. 6-50 or Sh. 13.
10. **NOTABLE HOROSCOPES**—Contains the Horoscopes of Sri Krishna, Buddha, Shankra, Christ, etc. 2nd Edition. Cloth bound. Pp. 464. Rs. 12 or Sh. 24.
11. **ASHTAKAVARGA SYSTEM OF PREDICTION**—The first of its kind on the practical application of Ashtaka-varga. 2nd Edition. Rs. 7-50 or Sh. 15.
12. **A HINDU IN AMERICA**—A must for all lovers of Astrology and Indian Culture. Rs. 10/- or Sh. 21.
13. **MUHURTHA OR ELECTIONAL ASTROLOGY**—This book tells how to achieve success in all your undertakings. 4th Edition. Rs. 8-25 or Sh. 17/6.

Ask for an illustrated catalogue.

RAMAN PUBLICATIONS

“Sri Rajeswari” : : BANGALORE-20

शुभ मंगल वेद वेदाङ्ग पुस्तकालय
 प्रब्लेम्स
 पाठ्य क्रमांक १०५४
 हिन्दी क्रमांक ३००७

शुभ मंगल वेद वेदाङ्ग पुस्तकालय
 वाराणसी ।
 क्रांति क्रमांक ३००७
 दिनांक १०५४

A Manual of Hindu Astrology

(CORRECT CASTING OF HOROSCOPES)

१० मुमुक्षु भवन वेद वेदाङ्ग पुस्तकालय

राजसी।

२००९

दत्त

By

BANGALORE VENKAT RAMAN

Editor, The Astrological Magazine

NINTH EDITION

RAMAN PUBLICATIONS
“Sri Rajeswari”, Bangalore-20.

1972

Price Per copy

Rs.8 /25

Postage

Extra

ll Rights Reserved

Export Price

£ 1.82 or

\$ 3.30

CONTENTS

	PAGE
FOREWORD by Prof. B. Suryanarain Rao	... XI
PREFACE TO FIRST EDITION	... XIV
PREFACE TO EIGHTH EDITION	... 1
INTRODUCTION by Dr. V. V. Ramana Sastrin	... 3
AUTHOR'S INTRODUCTION	... 5

CHAPTER I—THE ZODIAC AND THE PLANETARY SYSTEM

Article

1. The Zodiac	Page
2. The Ecliptic	33
3. The Signs of the Zodiac	33
4. The Constellations	34
5. The Planetary System	34
6. Rotation and Revolution	35
7. Velocities of Planets	36
8. Retrogression and Acceleration	37

CHAPTER II—PRELIMINARIES EXPLAINED

9. Rasis and their Extent	39
10. Nakshatras and their Extent	39
11. Movable Signs	41
12. Fixed Signs	41
13. Common Signs	41
14. Odd Signs	42
15. Even Signs	42
16. Signs of Long Ascension	42
• 17. Signs of Short Ascension	42
18. Sirodaya Signs	42
19. Prustodaya Signs	43

<i>Article</i>		<i>Page</i>
20. Quadrants	....	42
21. Trines	....	42
22. Succedent Houses	....	42
23. Cadent Houses	....	43
24. Oopachayas	....	43
25. Planetary Ownerships	....	43
26. Exaltations	....	43
27. Debilitations	....	43
28. Good and Evil Planets	....	43
29. Sexes	....	44
30. Moola Thrikonas	....	44
31. Planetary Relations	....	44
32. Karakas	....	45
33. Bhavas	....	46
34. The Astrological Measure	....	47

Astronomical Terminology

35. The Axis and Poles of the Earth	....	47
36. The Earth's Equator (Vishavarekha)	....	47
37. The Latitude (Akshamsa)	....	47
38. The Longitude (Rekhamsa)	....	48
39. The Celestial Equator (Nadivritta)	....	48
40. The Celestial Latitude (Kshepa)	....	48
41. The Declination (Kranti)	...	48

Chapter III—THE AYANAMSA

42. The Equinoctial Points	....	49
43. Precession of the Equinoxes	....	49
44. Movable and Fixed Zodiac	....	49
45. The Sayana and the Nirayana Systems	....	50
46. The Ayanamsa	....	50

VI

मुमुक्षु भवन वेद वेदाङ्ग पुस्तकालय

Page

<i>Article</i>		<i>Page</i>
47. Varahamihira's Observations	लिंग ३०८ से।	51
48. Exact Date of Coincidence not known	.....	51
49. Use of Ayanamsa	.....	52
50. Determination of (Approximate) Ayanamsa	.....	53

Chapter IV—RASIMANAS

51. Geographic and Geocentric Latitudes	.....	55
52. Rasimanas	.....	55
53. Charakhandas	.....	56
54. Rising Periods on the Equator	.....	57
55. Determination of Rasimanas	.....	58
56. Durations of Signs in South Latitudes	.....	61

Chapter V—SUNRISE AND SUNSET

57. Apparent Time of Rising and Setting of the Sun	.....	62
58. Apparent Noon	.....	62
59. Ahas and Ratri	.....	63
60. Hindu Method of Determination of Sunrise and of Sunset	.....	64
61. Modern Method of Determination of Apparent Time of Sunrise and of Sunset	.....	70
62. Equation of Time	.....	72
63. Method of the Determination of Equation of Time to get Mean Time from Apparent Time	.....	73
64. Mean Time of Sunrise and Sunset	.....	75
65. Easy Method of finding the Mean Time of Sunrise and of Sunset	.....	76

Chapter VI—MEASURE AND CONVERSION OF TIME

66. Hindu Chronology	....	78
67. Local Mean Time	....	80

<i>Article</i>		<i>Page</i>
68. Standard Time	....	82
69. The Standard Horoscope	....	83
70. Suryodayadi Jananakala Ghatikaha	....	84
<i>Chapter VII—GRAHA SPHUTAS</i>		
71. Hindu Almanac	....	85
72. Method of Making Graha Sphutas	....	85
73. Nirayana Longitudes of Planets	....	89
<i>Chapter VIII—LAGNA SPHUTA</i>		
74. Lagna or Ascendant	....	90
75. Solar Months	....	90
76. Determination of Lagna	....	91
77. Rasi Kundali	....	94
<i>Chapter IX—DASAMA BHAVA SPHUTA</i>		
78. The Dasama Bhava	....	95
79. Rasi Chakra	....	95
80. Conception of Bhava Chakra	....	96
81. Bhaskara's Definition	....	97
82. Bhava Chakra	....	97
83. Method of Determination of the Mid-heaven		97
<i>Chapter X—BHAVA SPHUTAS</i>		
84. Bhava or House	....	103
85. Bhava Madhyas	....	103
86. Kendra Bhavas	....	103
87. Determination of Kendra Bhavas	....	103
88. Non-Angular Houses	....	104
89. Determination of Bhava Madhyas of Non-Angular Houses	....	105
90. Bhava Sandhis	....	108

<i>Article</i>	<i>Page</i>
91. Determination of Bhava Sandhis	109
92. Poorva and Uttara Bhaga of Bhavas	110

Chapter XI

**CASTING THE HOROSCOPE ACCORDING TO THE
WESTERN METHOD AND ITS REDUCTION TO
THE HINDU**

93. General Observations	112
94. Hindu and Western Methods	113
95. The Modern Ephemeris	113
96. Table of Houses	114
97. Local Mean Time of Birth	114
98. Greenwich Mean Time of Birth	114
99. Greenwich Mean Time Interval of Birth	115
100. Daily Motion of Planets	115
101. Hindu Nirayana Longitudes of Planets....	116
102. The Sidereal Time of Birth....	120
103. R.A M.C. at Birth	121
104. Sayana Longitudes of Angular Houses....	122
105. Nirayana Tables	123

Chapter XII—THE SHODASA VARGAS

106. The Vargas	125
107. The Varga Divisions	125
108. The Shadvargas	126
109. The Saptavargas	126
110. The Dasavargas	126
111. The Shodasavargas	126
112. Rasi	127
113. Hora	127
114. Drekkana	129
115. Chaturthamsa	130

<i>Article</i>		<i>Page</i>
116. Sapthamsa	....	130
117. Navamsa	....	131
118. Navamsa and Nakshatra Padas	....	134
119. Navamsa Chakra	....	136
120. Dasamsa	....	136
121. Dwadasamsa	....	137
122. Shodasamsa	....	138
123. Vimsamsa	....	139
124. Chaturvimsamsa	....	140
125. Bhamsa	....	140
126. Thrimamsa	....	142
127. Khavedamsa	....	143
128. Akshavedamsa	....	144
129. Shashtiamsa	....	145
130. Other Amsas	....	147
131. Panchamsa	....	147
132. Shashtamsa	....	147
133. Ashtamsa	....	148
134. Ekadasamsa	....	148
135. Nadi Amsa	....	148
136. General Remarks	....	151
137. Interpretation of Saptavarga Table	....	152
TABLE I—Charakhandas (1° to 60° N. Lat.)	....	153
TABLE II—Terrestrial Latitudes and Longitudes	....	155
TABLE III—Equation of Time	....	162
TABLE IV—Table of Standard Times	....	163
TABLE V—Sunrise and Sunset	....	173
TABLE VI—Lord of vargas	....	177
An Index of Technical Terms	....	182

SRI
FOREWORD

By

Bangalore Suryanarain Rao

It gives me pleasure to write a few words by way of a Foreword.

The writer of this work, B. V. Raman, is my eldest son's eldest son, *i.e.*, my grandson. I was on the look-out for a competent successor to the special line of researches, *viz*, astronomico-astrology in which I have spent the major portion of my active life and have found my grandson, a competent youth to take up my work.

He has made an intelligent study of mathematical and predictive astrology and has been able to compose some treatises on this important subject.

The necessity of accurate mathematical knowledge is placed beyond a question ; and no astrologer of any pretensions can ever hope to become a successful predictor, unless he is competent in his astronomical knowledge of correctly casting the horoscope and finding out the various sources of strength and weakness of the Planets and the Bhavas.

This work, I am proud to say, has been done by my grandson, with considerable skill and ability. He has put his ideas in a flowing, convincing and easy style and the illustrations, he has given, will be found to be of immense use to the readers.

I have been, during the last 60 years of my activities in the astrological line, dealing more or less with judicial portion of astrology, and did not give as much attention as the subject of mathematical calculations demanded. Probably fate ordained, that, while I have fully treated in my own inimitable style, the predictive portions, the mathematical portions have been reserved to be elaborated by my own grandson, adding a feather to the line of my succession.

As this book deals with the essential aspects of Mathematical Astrology, necessary for correct computation of horoscopes, according to the Hindu system, the selection of the name as "A Manual of Hindu Astrology" is quite appropriate.

There has been a very great demand for such a book and I am proud to say that my grandson B. V. Raman has supplied the want with credit to himself.

This book is written with a view to help all those who are attempting to grasp the fundamental principles of Hindu Astronomico-astrology.

To write a book on mathematical portion requires patience, diligence and devotion, all of which my grandson has displayed in a commendable manner.

I pray to God earnestly that he may live to a long age, as God has been pleased to give me longevity, and do as much service to the public as possible. Blessing him with all my heart and praying to God to make him successful and prosperous.

BANGALORE,
5th October 1935.

B. SURYANARAIN RAO

PREFACE TO FIRST EDITION

Last year I wrote a comprehensive book entitled *Hindu Predictive Astrology*, the major portion of which has been devoted to the exposition of the predictive branch of the science. But later on, I realised the need for a book devoted to the mathematical side of the subject too, by the constant pressure brought to bear upon me by students of astrology. In casting horoscopes according to approved rules of Hindu Astrology, nothing but a series of mathematical calculations is involved; and hence the present manual is devoted to the exposition of the important and essential principles of Hindu Mathematical Astrology. The mathematical portions dealt with in these pages are very necessary for a student of astrology who wishes to become a successful predictor of future events. *Graha and Bhava Balas* which deals with the method of determination of strengths of planets and houses forms a companion volume to this and a study of both these books will simplify the whole range of astrological mathematics of the Hindus and will enable the student to prepare a suitable ground for venturing predictions. It is hoped the present work will supply a long-felt want.

All unnecessary and superfluous information constantly employed by writers on Mathematical Astrology, which are not only cumbersome but also unimportant from the point of view of correct predictions, has been omitted. Ignorance of even the elementary principles of Mathematical Astrology is sure to lead one to the obvious misconception of the fundamental postulates of the judicial system and, at the same time, too much indulgence in mathematics alone is equally harmful as completely atrophying one's judgement faculty and power of induction. Hence to cast and read a horoscope, a moderate knowledge of Mathematical Astrology would be simply invaluable.

This book deals with such aspects as the determination of the longitudes of planets, house-cusps, sunrise and sunset and other information essential for constructing a horoscope.

A separate chapter, exclusively devoted to describing the method of casting the horoscope, etc., according to the Western system and its reduction to the Hindu, has been included and this is sure to enhance the value of the book by making it accessible to the Eastern and Western students alike.

The book is intended both for the beginner and the advanced.

The book may have its own defects, and any suggestions for its improvement will be gratefully appreciated.

Original books on **Varshaphal* (Annual Reading of Horoscopes) based on Tajaka, Kala-chakra Dasas, etc., are in the course of preparation and they will be released for publication in due course, for the benefit of the astrological public. I am specially indebted to my grandfather Prof. B. Suryanarain Rao, to whom this work is dedicated for his valuable instructions to me in astrology.

I have relied to some extent on the English translation of *Sripathi Paddhati* by Mr. V. S. Subrahmanya Sastri for information on Dasama-bhava Sphuta and my thanks are due to him.

I feel certain that my humble endeavours in expounding Astrology will be appreciated by all well-wishers of knowledge and understanding.

BANGALORE,
5th October 1935.

B. V. RAMAN.

* *Varshaphal* or *The Hindi Progressed Horoscope* has already undergone eighth editions and is priced Rs. 7-50

PREFACE TO NINTH EDITION

I am glad to present herewith the ninth edition of *A Manual of Hindu Astrology* for the acceptance of the educated public. Several chapters have been entirely revised, re-cast and at some places re-written. Additional information has been furnished on astronomical terminology, casting the horoscope and the shodasa-vargas. The reader will find within the confines of this book all the information needed to construct a horoscope scientifically. The tables appended at the end of the book have been further amplified. The Table of Standard Times has been changed by making it up-to date; Tables V and VI will be found to be absolutely indispensable as facilitating the work of the student not only in the matter of ascertaining the times of sunrise and sunset but also enabling him to calculate the vargas or divisions (referred to in Chapter XII) easily.

I am grateful to the public for the confidence they have placed in my humble writings and for the encouragement they have been generously extending to my works. My labours will be

amply rewarded if by a study of my works the readers are enabled to take a much more positive interest in the study of the sublime science of astrology.

BANGALORE,
16-8-1972.

B. V. RAMAN

AN INTRODUCTION

By

Dr. V. V. Ramana Sastrin, M.A., Ph.D., F.Z.S., etc.

I am asked to write a few words by way of introduction, which I do with extreme pleasure, even in the face of poorly health.

The present volume is devoted to the astronomical basis of Hindu Astrology, not without occasional sidelights on the theory of Western Astrology, but the manner in which the relevant findings are marshalled, and the methods expounded, will not fail to hold the attention of the reader.

To the beginner with the merest acquaintance with the astronomical preliminaries, the presentation is bound to make a fascinating appeal, but to the trained student, the book, as a whole, cannot but serve the purpose of a stimulating repertory of the leading facts or concepts of astrological mathematics.

The Author, Prof. B. V. Raman, has already made his mark in the astrological world, and bids fair to hold his own in the future, as a first-rate expounder of Hindu Astrology. He is none

other than the grandson of Prof. B. Suryanarain Rao, the venerable doyen of Indian Astrologers of repute, whose personal teaching and example have gone not a little to make of the grandson what he is.

This book is intended to be the first of a series, planned to embrace the several departments of astrology, one after another, and I sincerely bid him God-speed in the successful materialisation of his plans.

VEDARANYAM,
TANJORE,
25 September 1935.

} (Sd.) V. V. RAMANAN.

AUTHOR'S INTRODUCTION

The mathematical basis of astrology is so precise and exact that even its greatest enemies cannot but be convinced of its scientific nature. The noble art of prediction assumes a fair amount of knowledge in the mathematical part of astrology. It cannot be denied that such an ability imposes a great strain on the limited mental acumen of the average astrologer, that his pretensions to make correct predictions are really baseless. It would be better to draw a distinction between mathematical astrology and astronomy. By the former, we mean, the relation of mathematics to astrology in so far as it is concerned with the correct determination of the longitudes of planets on the basis of reliable ephemerides or almanacs, cusps of the various houses, the different kinds of Balas or sources of strength and weakness of each planet and house, and such other details which are ascertainable with the aid of mathematics so that a sound basis for making correct predictions may be obtained. In other words, mathematical astrology deals with nothing but correct casting of horoscopes. And we classify the methods of computing the longitudes

of planets independently, determining the periods of eclipses and such other details as the measurement of the dimensions of the various celestial bodies and their internal and external peculiarities, etc., under astronomy. The ancient Hindus always regarded astrology and astronomy as synonymous so that a bad astronomer was also considered a bad astrologer. In fact the qualifications laid down by great and illustrious writers like Varahamihira and Bhaskaracharya are so rigorous, that we fear that none of us today would be deemed to be called an astrologer at all. Bhaskara stresses on the need for a clear knowledge of spherical astronomy for one, who wishes to be an astrologer and a comprehension of the doctrine of spherical projection and allied theories for locating the true positions of planets, etc. But, for our purpose, we shall maintain this distinction, we have called attention to above, in regard to mathematical astrology and astronomy and deem that a fair acquaintance with the principles of mathematical astrology is absolutely essential for successful predictions.

A noteworthy sign of this century seems to be a general awakening in the minds of the educated classes to institute a scientific inquiry

into ancient subjects like astrology and astronomy. It is, however, deplorable to note that, in their over-enthusiasm to benefit the cause of the science, many of the English educated Indians of today have been adopting an undesirable attitude towards Hindu astronomical calculations in rejecting them altogether as incorrect or inconsistent and replacing them entirely by modern ones, as being quite accurate and precise. The arguments advanced by them, in favour of such a theory, are generally unsound and cannot stand the test of actual demonstration. Are we to reject the Hindu astronomical calculations formulated and adopted by such celebrated exponents of the celestial science as Varahamihira, Bhaskara, Sripathi and others, because they seem to clash with modern ones, while accepting the ancient astrological principles ? A Varahamihira or a Kalidasa who has bequeathed to us such master-pieces as *Brihat Jataka* and *Uttara Kalamritha* could not have been so ignorant or indifferent as to give room for such fallacies, inconsistencies and errors which we are trying to find out in their writings. It would be the height of folly and absurdity to estimate their conclusions in matters of astronomy and astrology in the light of our own developments or achievements in

those branches of knowledge. Modern decisions and conclusions cannot be taken as criteria for judging the accuracy or otherwise of the ancient Hindu Astronomers. The extreme accuracy and precision to which we lay claim are oftentimes questionable. It is true that no satisfactory agreement could be found between the writings of any two people even in ancient books. But what of it? Do all modern calculations tally with each other? Certainly not. Take for instance the measurement of terrestrial latitudes. Each reference book, an authority in its own way, differs decidedly from the other. Bangalore is located on 13° , 12° , $57'$ and $12^{\circ} 58''$ N. Lat.; which of these is correct? Therefore it is useless to reject the ancient methods of calculations completely, because they seem to clash with ours and replace them entirely by those of modern times.

Most of the theories of today are simply tentative; they have not, as yet, been established. The statements of some of the astronomers are really ludicrous and excite sympathy in the hearts of sober men for such perverted views. Modern calculations alone cannot be accepted as correct or accurate (for astrological purposes) and the ancient ones rejected. Moreover the ancient

Hindu astronomers dreaded secular interference in matters of astronomy for *astrological purposes*.

The ancient Maharis were past masters of the first magnitude in almost all branches of knowledge. That they discovered many phenomena by mere observation alone cannot be vouchsafed. The plane of observation employed by them was certainly quite different from that of the modern scientists. The art of Yoga was peculiar to them. Not being satisfied with the nature of the phenomena revealed by glasses and other material objects, they dived deep into the unfathomable depths of Yoga by means of which they were able to see things in their reality, face to face. The first *sutra* in the *Grahanirnaya Prakarana* of the *Bhoutika Sutras* is “*Darpanemithya Vadaha*” meaning that objects at a distance, viewed through glasses, always present forms, which really do not represent their true state of nature. This clearly suggests, that to get at truth, so far as the celestial and distant objects are concerned, we must view them by something other than glasses, as there are many media between them and earth, whose refracting and dispersing powers, we do not know much about. Thus they had the gift of Yoga, the fragments

of which we see even unto this day, which helped them to a great extent in their expeditions in unveiling the mysteries surrounding the phenomenon of the celestial bodies.

There may be still other causes for the existence of differences between modern and ancient astronomical observations. For instance the equation of the Sun's centre according to the Indian tables is $2^{\circ} 10\frac{1}{2}'$ whereas according to modern observations it is only $1^{\circ} 55\frac{1}{2}'$. Is the first figure wrong because it differs from the second? It cannot be; for "the eccentricity of the solar orbit on which the equation just mentioned depends was greater in former ages than it is at the present time because of the consequence of natural disturbances of planets". Hindu calculations require consideration of Hindu figures and tables and we have to consider Hindu methods alone in matters of Hindu Astronomy. Prof. Wilson observes that "the science of astronomy at present exhibits many proofs of accurate observation and deduction, highly creditable to the science of the Hindu Astronomers". Take for instance eclipses. The Hindu methods yield as correct results as the modern methods.

The sciences of Hindu Astronomy and Astrology have got into disrepute by the ignorance of some astrologers whose mercenary nature makes them impervious and indifferent to the grave responsibilities that lie on their heads ; such an attitude of these people is directly traceable to the lethargic mentality of many of our indolent Rajas and Maharajas who, while spending immense sums on useless and chimerical purposes, are completely deaf towards rehabilitating such useful sciences as astrology and astronomy.

What is needed is not rejection but an observational rectification of the elements employed by ancient astronomers.

The perfection of predictive astrology among the ancient Hindus was really marvellous, and today, we have lost that power. Even with sound mathematical basis, our predictions are generally vague and indefinite—except for a few, made by the real experts in this science. Is it because, our inductive faculty is marred by the too much precision we aim at, or are we on the wrong track ? Are we not wasting much of our precious time by entering into profitless discussions and controversies as regards house division, ascribing rulership to the so-called newly disco-

vered planets, finding the rationale of the significations of the different houses of the zodiac, etc. The greater portion of our time must be devoted to the practical study of astrology. This requires a moderate knowledge of astrological calculations. For instance, in determining, Ayurdaya. Maraka Grahas (death-inflicting planets) and the time of death, we should ascertain the relative sources of strength and weakness of the different planets. This requires a fair knowledge of Shadbalas. And with our present knowledge in the predictive art, we do not require to be so precise as to find out "0.000067" of an Arc. We had better maintain what can be termed "minute precision" and then adopt "second precision" after we have attained proficiency in the art of predictions consistent with our present precision in calculations.

Bearing this in mind, if the reader goes through this volume, without any bias or prepossession, he will really find much useful information presented in quite an intelligible manner. Throughout the book, in the examples worked out, fractions less than half a Ghati or 30" of Arc have been rejected. If the reader is patient enough he can consider the minutest divisions and maintain the degree of accuracy he wants.

In the determination of Madhya Lagna (10th Bhava), the Hindus do not consider the Sidereal Time of Birth. Instead, the Sun's Sayana Longitude at birth moment and the interval between meridian-distance are taken and the Dasama bhava Longitude determined by considering the Sidereal Time of the ascension of the Rasimanas on the equator according to the prescribed rules. Besides, the Bhogya and Bhuktha portion of a sign are found out by the application of rule of three assuming that equal arcs ascend at equal times. These two are considered by some recent writers as fallacies or errors. But they are not fallacies at all astrologically because, perhaps the ancients thought, that it would not make much difference, whether the ascension of arc was calculated arithmetically or by more refined modern methods *for astrological purposes*. They had their own reasons, which remain inexplicable, to assume so many things, which look controvertible today. We have not the slightest justifiable ground to label them as incorrect and eulogise our own conclusions as eminently correct. We have lost the power of Yoga, we cannot see things face to face by physical aids. And hence we can neither deprecate the one nor appreciate

the other. Each has its own faults and perfections and we must as far as possible adopt the Hindu method of calculations for applying Hindu astronomical principles.

BANGALORE

5th October 1935.

B. V. RAMAN.

DEDICATION

—o—

The Work is Respectfully Dedicated to my
revered grandfather
Bangalore Suryanarain Rao

B. V. RAMAN
The Author.

A MANUAL OF HINDU ASTROLOGY

SRI

CHAPTER I

The Zodiac and the Planetary System

1. The Zodiac.—It is a broad band or belt in the heavens extending 9 degrees on either side of the ecliptic, and known to the Hindus as Bhachakra or the Circle of Light. It is a circle and as such it knows no beginning or end. In order to measure the distance, an arbitrary point is established, which is called the first point of Aries. The zodiac revolves once in a day on its axis, from east to west.

2. The Ecliptic.—The ecliptic is the Sun's path. This is known as *Apamandala* or *Ravi marga* in Sanskrit. It passes exactly through the centre of the zodiac longitudinally.

3. The Signs of the Zodiac.—The ecliptic is divided into twelve equal compartments, the signs of the zodiac, each being thirty degrees in extent. Each sign has its own peculiar qualities attributed to it by the ancient Maharshis, after careful and profound observation and meditation. As already observed above, the commencement of the zodiac is reckoned from the first point of Aries. Each degree is divided into sixty minutes and each minute is further subdivided into sixty seconds,

so that, the total extent of the zodiac is 21,600 minutes or 129,600 seconds.

4. The Constellations.—The ecliptic is marked by twenty-seven constellations or nakshatras, often called lunar mansions, because the Moon is brought into special connection with them, as traversing twenty-seven constellations and making a complete round of the ecliptic in a lunar month. Each constellation contains four padas or quarters and each quarter is equal to $3\frac{1}{3}^{\circ}$ of the celestial arc (*rekha*). In other words the whole zodiac consists of 108 padas so that each constellation measures $13^{\circ} 20'$ of arc. The Rasis and the Nakshatras are both reckoned from the same point, viz., the zero degree of longitude of Mesha (Aries), i.e., the initial point of Mesha* (See Chap. II) or the first point of Aswini.

5. The Planetary System.—The planetary system otherwise known as the solar system, headed by the most glorious Sun—the *Jagat-chakshu*—consists of seven important planets (including the Sun himself). All the planets, save the central luminary, are held by the gravitation of the Sun and they all revolve round him,

* See Varahamihira's *Brihat Jataka*—English translation by Prof. Suryanarain Rao.

the period of revolution varying with reference to each planet. Along with these are included Rahu and Kethu—considered as *Aprakashaka grahas* or shadowy planets; and moreover their importance does not seem to have been stressed upon by writers on mathematical astrology, for they are said to partake of the characteristics of the signs which they occupy, whilst writers on judicial astrology invariably recognise their influences in the analysis of a horoscope.

According to *Suryasiddhanta*, Saturn is the most distant planet from the earth; Jupiter, Mars, the Sun, Venus, Mercury and the Moon, come next in the order of their distance. Uranus, Neptune and Pluto have no place in Hindu astrology.

6. Rotation and Revolution.—These planetary orbs, which the ancients recognised as having powerful influences on the terrestrial phenomena, perform the double function of not only rotating on their own axes (*Brahmana*) from west to east, but also revolving round the Sun (*Bhagana*). The latter is comprehended in the astronomical nomenclature as the orbital revolution of the earth and the planets, which for the sake of simplicity, we have preferred to call as revolution.

7. Velocities of Planets.—Each planet has its own rate of motion or velocity depending upon its nearness to or distance from the earth. For instance, the Moon is our nearest planet and consequently she has a very swift motion. She travels round the zodiac once in 30 lunar days ; whereas, Saturn, who is the most distant from us, has got the slowest motion and accordingly performs one revolution round the ecliptic once in thirty years. The planets do not maintain a uniform rate of movement, for various causes. The following are the approximate periods taken by each planet to make a circuit round the zodiac.

The Sun moves at the rate of roughly one degree a day or $365\frac{1}{4}$ days for one complete revolution. The Moon takes 27 days 7 hours and odd for a similar circuit. Mars takes, 18 months for one revolution. Mercury requires a similar period as the Sun but his closeness to the Sun makes Mercury rather unsteady with the result that he often takes 27 days to pass through one sign. Jupiter requires roughly twelve years for a circuit. Venus has more or less the same velocity as the Sun. And Saturn moves for thirty months in a sign. Rahu and Kethu take 18 months each in a sign or 18 years for a complete revolution. All the planets have *Savya* or direct

motion, while Rahu and Kethu have *Apasavya gathi*, i.e., they move from east to west.

The Velocities of Planets

		Deg.	Min.	Sec.	Para.	Paratpara	Tatpara
Sun	per day	0	59	8	10	10	24
Moon	„	13	10	34	52	3	49
Mars	„	0	31	26	28	11	9
Mercury	„	4	5	32	20	41	51
Jupiter	„	0	4	59	8	48	35
Venus	„	1	36	7	43	37	15
Saturn	„	0	2	0	22	53	25
60 Tatparas		=	1 Paratpara				
60 Paratparas		=	1 Para				
60 Paras		=	1 Second				

The above information is culled out from an ancient astronomical work and the reader is referred to works on modern astronomy for fuller and more detailed information.

8. Retrogression and Acceleration.—When the distance of any one planet from the Sun exceeds a particular limit, it becomes retrograde, i.e., when the planet goes from perihelion (the part of a planet's orbit nearest to the Sun) to aphelion (the part of a planet's orbit most distant from the Sun) as it recedes from the

Sun, it gradually loses the power of the Sun's gravitation and consequently, to gain it, it retrogrades; and when the planet comes from aphelion to perihelion, nearer and nearer to the Sun the gravitation of the Sun grows more and more powerful, so that the velocity of the planet is accelerated, i.e., the state of *Athichara* is entered into. All the planets are subject to retrogression and acceleration excepting the Sun and the Moon, let alone the *Aprakashaka grahas*. Hence we find that there is no uniformity in the velocities of planets, that they are different at different parts of the orbits and that the planetary orbits are elliptical. The *vakra*, *athichara*, etc., are caused, according to *Suryasiddhanta*, by the invisible forces *Seegrochcha*, *Mandochcha* and *Patha*. The phenomenon of retrogression has been elaborately discussed in my *Graha and Bhava Balas*.

The importance of *vakra*, etc., of planets, so far as it is necessary for astrological purposes, will be dealt with in its proper place. Those who wish to soar into the higher regions of astronomy will do well to study such celebrated works as *Suryasiddhanta*, *Panchasiddhantika*, etc., of illustrious authors of yore, in whose luminous expositions of this celestial science, the inquiring mind is sure to find much more than what is sought for.

CHAPTER II
Preliminaries Explained

9. Rasis and Their Extent.—

No.	Sign	Its English Equivalent	Its Symbol	Its Extent
1.	Mesha	Aries	♈	0° 30'
2.	Vrishabha	Taurus	♉	30 60
3.	Mithuna	Gemini	♊	60 90
4.	Katuka	Cancer	♋	90 120
5.	Simha	Leo	♌	120 150
6.	Kanya	Virgo	♍	150 180
7.	Thula	Libra	♎	180 210
8.	Vrischika	Scorpio	♏	210 240
9.	Dhanus	Sagittarius	♐	240 270
10.	Makara	Capricorn	♑	270 300
11.	Kumbha	Aquarius	♒	300 330
12.	Meena	Pisces	♓	330 360

10. Nakshatras and Their Extent.—

No.	Rasi (Sign)	Nakshatra (Constellation)	Pada (Quarter)	Space on the ecliptic from 0° Aries
1.	Aries	1. Aswini	4	13° 20'
		2. Bharani	4	26 40
		3. Krittika	1	30 00
2.	Taurus	Krittika	3	40 0
		4. Rohini	4	53 20
3.	Gemini	5. Mrigasira	2	60 0
		Mrigasira	2	66 40
		6. Aridra	4	80 0
		7. Punarvasu	3	90 0

No.	Rasi (Sign)	Nakshatra (Constellation)	Pada (Quarter)	Space on the ecliptic from 0° Aries
4.	Cancer	Punarvasu	1	93 20
		Pushyami	4	106 40
		Aslesha	4	120 0
5.	Leo	Makha	4	133 20
		Pubba	4	146 40
		Uttara	1	150 0
6.	Virgo	Uttara	3	160 0
		Hasta	4	173 20
		Chitta	2	180 0
7.	Libra	Chitta	2	186 40
		Swati	4	200 0
		Visakha	3	210 0
8.	Scorpio	Visakha	1	213 20
		Anuradha	4	226 40
		Jyeshta	4	240 0
9.	Sagittarius	Moola	4	253 20
		Poorvashadha	4	266 40
		Uttarashadha	1	270 0
10.	Capricorn	Uttarashadha	3	280 0
		Sravana	4	293 20
		Dhanishta	2	300 0
11.	Aquarius	Dhanishta	2	306 40
		Satabhisha	4	320 0
		Poorvabhadra	3	330 0
12.	Pisces	Poorvabhadra	1	333 20
		Uttarabhadra	4	346 40
		Revati	4	360 0

The above table may be interpreted thus. It will be seen that there are 27 constellations comprising the 12 signs. For instance, take Aries. You will find that 4 quarters of Aswini ($13^{\circ} 20'$), 4 of Bharani ($13^{\circ} 20'$) and 1 of Krittika ($3^{\circ} 20'$)—on the whole 9 quarters—constitute it. Again, the remaining 3 of Krittika (10°), the 4 of Rohini ($13^{\circ} 20'$) and 2 of Mrigasira ($6^{\circ} 40'$) make up Taurus and so on. What use this table will be of, the reader will realise after he has gone through some more pages. For the present, suffice it to say that he must be quite familiar with it in order to understand the information set forth in subsequent chapters.

Note.—In the characteristics of the signs and planets which I am giving below, such information as has a direct bearing upon and involved in the mathematical calculations, has been included. All other details necessary for predictions, which can be gathered from any astrological work, has been scrupulously omitted.

11. Movable Signs.—Aries, Cancer, Libra and Capricorn.

12. Fixed Signs.—Taurus, Leo, Scorpio and Aquarius.

13. Common Signs.—Gemini, Virgo, Sagittarius and Pisces.

14. Odd Signs.—Aries, Gemini, Leo, Libra, Sagittarius and Aquarius.

15. Even Signs.—Taurus, Cancer, Virgo, Scorpio, Capricorn and Pisces.

16. Signs of Long Ascension.—Cancer, Leo, Virgo, Libra, Scorpio and Sagittarius.

17. Signs of Short Ascension.—Capricorn, Aquarius, Pisces, Aries, Taurus and Gemini.

This order has to be reversed for places south of the equator.

18. Sirodaya Signs (Rising by head).—Gemini, Leo, Virgo, Libra, Scorpio and Aquarius.

19. Prustodaya Signs (Rising by hinder part).—Aries, Taurus, Cancer, Sagittarius and Capricorn.

The Sirodaya signs excepting Gemini are powerful during the day. The Prustodaya signs including Gemini are powerful during the night. The former are also called Nocturnal signs and the latter the Diurnal signs. Pisces and Gemini form a combination of the two and is called Ubhayodaya Rasi.

20. Quadrants (Kendras)—1, 4, 7 and 10.

21. Trines (Trikonas).—1, 5 and 9.

22. Succeedent Houses (Panaparas).—2, 5, 8 and 11.

23. Cadent Houses (Apoklimas).—3, 6, 9 and 12 (9th being a trikona must be omitted).

24. Oopachayas.—3, 6, 10 and 11.

25. Planetary Ownerships.—Aries and Scorpio are ruled by Mars, Taurus and Libra by Venus; Gemini and Virgo by Mercury; Cancer by the Moon; Leo by the Sun; Sagittarius and Pisces by Jupiter; and Capricorn and Aquarius by Saturn.

26. Exaltation.—The Sun has his deep exaltation in the 10th degree of Aries; Moon 3rd of Taurus; Mars 28th of Capricorn; Mercury 15th of Virgo; Jupiter 5th of Cancer; Venus 27th of Pisces; and Saturn 20th of Libra.

27. Debilitation.—The 7th house or the 180th degree from the place of exaltation is the place of debilitation or fall. The Sun is debilitated in the 10th degree of Libra, the Moon 3rd of Scorpio and so on.

28. Good and Evil Planets.—Jupiter, Venus, full Moon and well-associated Mercury are good or benefic planets and new Moon, badly associated Mercury, the Sun, Saturn and Mars are evil or malefic planets. From the 8th day of the bright half of the lunar month the Moon is full. He is weak from the 8th day of the dark half.

29. Sexes.—Jupiter, Mars and the Sun are males; Venus and the Moon are females; and Mercury and Saturn are eunuchs.

30. Moola Trikonas.—Sun's Moola Trikona is Leo (0° - 20°); Moon—Taurus (4° - 30°); Mercury—Virgo (16° - 20°); Jupiter—Sagittarius (0° - 13°): Mars—Aries (0° - 18°); Venus—Libra (0° - 10°) and Saturn—Aquarius (0° - 20°).

31. Planetary Relations.—By friendship we mean that the rays of the one planet will be intensified by those of the other, declared as his friend, while the same rays will be counteracted by a planet who is an enemy.

Friendship will be both permanent (*Naisargika*) and temporary (*Tatkalika*). (See my *Graha and Bhava Balas* for Tatkalika friendship.)

Permanent Relationship

<i>Planets (Grahas)</i>	<i>Friends (Mitras)</i>	<i>Neutrals (Samas)</i>	<i>Enemies (Satrus)</i>
Sun	.... Moon, Mars, Jupiter.	Mercury	Saturn Venus.
Moon	.... Sun, Mercury.	Mars Jupiter, Venus, Saturn.	None.
Mars	.... Sun Moon, Jupiter.	Venus, Saturn.	Mercury.

Mercury	.... Sun, Venus.	Mars, Jupiter. Saturn.	Moon.
Jupiter	.... Sun, Moon, Mars.	Saturn.	Mercury, Venus.
Venus	.... Mercury, Saturn.	Mars, Jupiter.	Sun. Moon,
Saturn	.... Mercury, Venus.	Jupiter.	Sun, Moon, Mars,

The practical applicability of some of these characteristics of planets and signs have been explained in my *Graha and Bhava Balas*, etc.

32. Karakas.—Each planet is supposed to be the karaka of certain events in life. Many function as producing, rather promoting the incidents ascribed to them.

Name	English equivalent	Symbol	Karaka of	Indicator of
Surya	Sun	☉	Pitru	Father
Chandra	Moon	☽	Matru	Mother
Angaraka	Mars	♂	Bhratru	Brother
Budha	Mercury	☿	Karma	Profession
Guru	Jupiter	♃	Putra	Children
Sukra	Venus	♀	Kalatra	Wife or Husband
Sani	Saturn	♄	Ayus	Longevity
Rahu	Dragon's Head	☊	Mathamaha	Maternal relations
Kethu	Dragon's Tail	☋	Pithamaha	Paternal relations

33. **Bhavas.**—These correspond roughly to the “Houses” of Western astrology. The most powerful point in a bhava is its Madhya Bhaga or mid-point whereas the first point is the most powerful in a “Western House”. There are twelve bhavas and each controls rather signifies certain important events and incidents.

<i>Bhava</i>	<i>House</i>	<i>Signification</i>
(1) Thanubhava	First House	build, body, appearance.
(2) Dhanabhava	Second House	family, source of death, property, vision
(3) Bhratrabhava	Third House	intelligence, brothers,, sisters.
(4) Sukhabhava	Fourth House	vehicles, general hap- piness, education, mother.
(5) Putrabhava	Fifth House	fame, children.
(6) Satrubbhava	Sixth House	debts, diseases, misery enemies.
(7) Kalatrabhava	Seventh House	wife or husband, death
(8) Ayurbhava	Eighth House	longevity, gifts.
(9) Dharmabhava	Ninth House	god, guru, father, travels, piety.
(10) Karmabhava	Tenth House	occupation, karma, philosophical know- ledge.
(11) Labhabhava	Eleventh House	gains.
(12) Vrayabhava	Twelfth House	loss, moksha.

34. The Astrological Measure.—The various sources of strength and weakness of the planets and Bhavas are estimated by certain units or measures. They are Rupas, Virupas and Prarupas. 60 Prarupas are equal to 1 Virupa and 60 Virupas make 1 Rupa.

Astronomical Terminology

35. The Axis and Poles of the Earth.—The axis of the earth is that diameter about which it revolves from west to east with a uniform motion. The poles of the earth are its points where its axis meets its surface and they are the north pole and the south pole.

36. The Earth's Equator (Vishavarekha).—This is an imaginary line running round the earth half-way between the two poles. The equator divides the earth into a northern and a southern hemisphere.

37. The Latitude (Akshamsa).—The latitude of a place is its distance north or south of the equator, measured as an angle, on its own terrestrial meridian. It is reckoned in degrees, minutes and seconds from 0° to 90°, northwards or southwards according as the place lies in the northern or southern hemisphere.

38. The Longitude (Rekhamsa).—The longitude of the place is its distance east or west of the meridian or Greenwich (Ujjain according to the Hindus) measured as an angle. It is expressed as so many degrees, minutes and seconds, east or west of Greenwich according to where the place lies. It is also reckoned in time at the rate of 24 hours for 360° or 4 minutes for every degree.

39. The Celestial Equator (Nadivritta).—This is a great circle of celestial sphere marked out by the indefinite extension of the plane of the terrestrial equator.

40. The Celestial Latitude (Kshepa).—This is the angular distance of a heavenly body from the ecliptic.

41. The Declination (Kranti).—This is the angular distance of heavenly body from the celestial equator. It is positive or negative according as the celestial object is situated in the northern or southern hemisphere.

CHAPTER III

The Ayanamā

42. Equinoctial Points.—The celestial equator and the ecliptic intersect each other at two points; because, twice a year the Sun crosses the equator. On these two days the duration of day and night will be equal all the world over. These two points are known as the equinoctial points or the Vernal Equinox and the Autumnal Equinox.

43. Precession of the Equinoxes.—It has been observed and proved mathematically that each year at the time when the Sun reaches his equinoctial point of Aries 0°, when throughout the earth, the day and night are equal in length, the position of the earth in reference to some fixed star is nearly $50 \frac{1}{3}''$ of space farther west than the earth was, at the same equinoctial moment of the previous year. It is not merely the earth or the solar system, but the entire zodiac that is subjected to this westward motion. This slight increment—retrograde motion of the equinoxes—is known as the Precession of the Equinoxes.

44. Movable and Fixed Zodiacs.—We have seen from the above that the vernal equinox slips backwards from its original position—recognised

as the star Revati—by the Hindus. The zodiac which reckons the first degree of Aries from the equinoctial point which has a precession every year is the movable zodiac, whilst, in the case of the fixed zodiac, the first degree of Aries begins from a particular star in the Revati group of stars which is fixed. The movable zodiac is also termed as the zodiac of signs while the fixed zodiac is known as the Zodiac of Constellations, as its signs are almost identical with the constellations bearing the same names.

45. The Sayana and the Nirayana Systems.— The system of astronomy which recognises the movable zodiac belongs to the Sayana school while that which considers the fixed zodiac is termed as the Nirayana system. The Sayana is the one employed by Western astrologers for predictive purposes while the Hindu astrologers use the fixed zodiac. Of late there is a movement in the Western astrological circles in favour of the Nirayana zodiac and many leading astrologers have shown their preference for what they call the sidereal zodiac, another name for the Nirayana system.

46. The Ayanamsa.—The distance between the Hindu first point and the Vernal Equinox, measured at an epoch, is known as the Ayanamsa.

47. Varahamihira's Observations.—Even Varahamihira, one of the most celebrated of ancient writers in India, perpetuates and carries on the teachings of his far more ancient predecessors in marking the distinction between the two zodiacs and referring all the astrological observations to the fixed zodiac. He states, that in his time, the summer solstice coincided with the first degree of Cancer, and the winter solstice with the first degree of Capricorn, whereas at one time the summer solstice coincided with the middle of the Aslesha.

48. Exact Date of Coincidence not known.—The exact period when both the zodiacs coincided in the first point is not definitely known and accordingly the Ayanamsa—the precessional distance—varies from 19' to 23'. The star which marked the first point seems to have somehow disappeared though some believe that it is 11' east of the star Pisces. A number of dates are given as the year of the coincidence, viz., 361 A.D., 394 A.D., 397 A.D., 498 A.D., 559 A.D., etc.; which to accept, and which to reject, has been a matter of considerable doubt. No definite proof is available in favour of any one of the dates given above. No amount of mere speculation would be of any use, especially in such matters. Some

attribute these differences to the supposed errors in Hindu observations. Whatever they may be it is not our purpose here to enter into any sort of discussion which would be purely of academical interest and absolutely outside our limits. As such without worrying the reader with the technicalities involved in the discussion of a most vital question like that of the Precession of the Equinoxes we shall directly enter into setting below, a simple method for ascertaining the Ayanamsa, which will serve the purpose of any scientific astrologer and which would enable the reader to thoroughly understand and follow the principles described in the following pages.

49. Use of Ayanamsa.—The Indian adepts in the celestial science, realising that the degrees of the fixed zodiac have a permanent relation with the star-points, and that the movable zodiac does not give us a definite position both for observation and experiment and to arrive at logical conclusions, have been advocating the Nirayana positions of planets for all predictive purposes, which should be arrived at after the necessary calculations are made according to Sayana and then the Ayanamsa subtracted from such positions. For astrological purposes, it would be quite sufficient, if we know how to

determine the Ayanamsa for any particular year. Since the object of this book is not to enter into any discussion about the superiority of this or that system, or the justification of adopting any particular value as the Ayanamsa, but to clearly describe and expound principles necessary for correct computation of a horoscope mathematically, according to the prescribed rules and determine the various sources of strength and weakness of planets and discover other details that are within the reach of mathematical astrology and thus clear the way for making correct predictions, we do not propose to lay any further stress on this question of Ayanamsa.

The Longitudes of the Houses (Bhava Sphutas), Rasimanas (Oblique Ascensions) and other important calculations are all computed for Sayana Rasis. From these the Ayanamsa is subtracted and thus the Nirayana Bhavas, etc., are obtained. In other words, every one of the Hindu astrological calculations, which is at first based upon the Sayana Rasis, is eventually subjected to Nirayana reduction. All these indicate the absolute necessity for Aynamasa.

50. Determination of (Approximate) Ayanamsa.—(1) Subtract 397 from the year of birth (A.D.).

(2) Multiply the remainder by $50\frac{1}{3}''$, and reduce the product into degrees, minutes and seconds.

Example 1.—Determine the Ayanamsa for 1912 A.D.

$$1912 - 307 = 1515 \times 50 \frac{1}{3}'' = 76,255''$$

$$76,255'' = 21^\circ 10' 55''.$$

Example 2.—Find the Ayanamsa for 1918 A.D.

$$1918 - 307 = 1521 \times 50 \frac{1}{3}'' = 76,557'' = 21^\circ 15' 57''.$$

The slipping back of the movable zodiac in a year is so small that for odd days, we can conveniently ignore it. But the Ayanamsa for the moment can be determined by considering the precession for the odd days also.

CHAPTER IV

Rasimanas

51. Geographic and Geocentric Latitudes.—

The latitudes of places marked in any ordinary atlas are geographical latitudes. Because they are calculated on the supposition that the earth is a perfect sphere, while on the other hand, the flattened ends at the two poles make it a spheroid, so that the latitude, measured from the true centre of the spheroid, is the geocentric latitude. For astrological purposes, it would be hardly worthwhile making any distinction whatever between the geocentric and geographic latitude of Bangalore is $12^{\circ} 57'$ and its geocentric $12^{\circ} 52'$. We can adopt the former alone for astrological calculations.

52. Rasimanas.—Rasimanas mean the rising periods of the twelve signs of the zodiac. It is impossible to find out the actual Lagna (Ascendant) in a horoscope or the different Bhavas (Houses) or the sunrise and sunset in any place without a knowledge of the Rasimanas, which vary from Akshamsa (latitude) to Akshamsa. It must be noted that the Rasimana is always given in Sayana (with precession), that is to say, the time of oblique ascension is computed for the signs of the movable zodiac. From this is

subtracted the Ayanamsa and the appropriate time of the oblique ascension and thus is got the Nirayana Rasimana. If the division of the zodiac into 12 signs be taken to commence from the equinoctial point, their rising periods for any particular place will not vary from year to year.

53. Charakhandas.—The duration of the signs of zodiac varies in the different degrees of latitude which can be ascertained by the Charakhandas (ascensional differences) of the particular latitude. Say, for instance, two men are born at the same time, one in Bangalore and the other in Berlin. Their latitudes are different. The rising periods of the signs in Bangalore must be quite different from those in Berlin. The sunrise and sunset in both places cannot be the same. Therefore the rising periods in the different latitudes must be definitely known before casting a horoscope.

These Charakhandas (ascensional differences) referred to above, in Indian sidereal time, the unit of which is an Asu (which is the equivalent of four seconds in English sidereal time) are, in accordance with certain definite rules, added to or subtracted from, the time of the Right Ascension (Dhruva) of the various Sayana Rasis, in order to get their Oblique Ascension. (Chara). Since the Chara (period of oblique ascension) and the

Dhruva (period of right ascension) are identically the same for the Vishavarekha (equator) the ascensional difference is zero (shunya) for all the places situated on the equator. The ascensional difference is the same, in respect of the same sign, for places situated in the same latitude.

To be more clear, the rising periods on the equator where the Charakhanda is zero—being known, it is possible to calculate the Rasimanas for any latitude, provided its Charakhandas are also known.

54. Rising Periods on the Equator.—The rising periods of the zodiacal signs reckoned from Sayana Mesha are thus distributed on the equator (0° Latitude).

Asus

Aries	Virgo	1674	Libra	Pisces
Taurus	Leo	1795	Scorpio	Aquarius
Gemini	Cancer	1931	Sagittarius	Capricorn

(6 Asus=1 Vighatika=24 Seconds.

60 Vighatikas=1 Ghatika=24 Minutes.)

The above means that it takes Aries, Virgo, Libra and Pisces, 1674 Asus or 4 Gh. 39 Vig. (or $1^{\text{h}} 51^{\text{m}} 36^{\text{s}}$) to rise at the eastern horizon on the equator and so on.

55. Determination of Rasimanas.—From or to the rising periods on the equator, the Charakandas (ascensional differences of the required place from Aries to Gemini and from Capricorn to Pisces are subtractive* and from Cancer to Virgo and from Libra to Sagittarius are additive. That is, in the case of from Aries to Gemini and from Capricorn to Pisces, subtract the Charakandas and from Cancer to Virgo and from Libra to Sagittarius add the Charakandas of the required place and the rising periods of signs there, are obtained. These must be applied to any one of four triads as given above, into which the zodiacal signs are divided—commencing always from the Sayana Mesha, i.e., the first 30 from the equinoctial point.

* In North Latitudes.

DETERMINATION OF RASIMANAS 59

The following examples will clear the meaning :—

Example 3 —Find the Rasimanas at 13° N. Lat. whose Charakhandas are 162, 130 and 53 Asus respectively

Signs	Rising periods at 0° Lat. (in Asus)	Chara- kandas on 13° N. Latitude	Times of oblique ascension at 13° N. Latitude (in Asus)	Times of oblique ascension at 13° N. Latitude (in Ghatis)	Gh.	Vig.
1. Aries	1,674	—	162	1,512	4 12
2. Taurus	1,795	—	130	1,665	4 37 1/2
3. Gemini	1,931	—	53	1,878	5 13
4. Cancer	1,931	+	53	1,984	5 30 2/3
5. Leo	1,795	+	130	1,925	5 20 5/6
6. Virgo	1,674	+	162	1,836	5 6
7. Libra	1,674	+	162	1,836	5 6
8. Scorpio	1,725	+	130	1,925	5 20 5/6
9. Sagittarius	1,931	+	53	1,984	5 30 2/3
10. Capricorn	1,931	+	53	1,878	5 13
11. Aquarius	1,795	—	130	1,665	4 37 1/2
12. Pisces	1,674	—	162	1,512	4 12
		21,600		21,600	60	0

Example 4.—Find Rasimanas on $51^{\circ} 32' N$ Lat. whose Charakhandas are 921, 737 and 307 respectively.

Signs	Rising periods at 0° Lat. (in Asus)	Chara- kandas at $51^{\circ} 32'$ N. Lat.	Time of oblique ascension at $51^{\circ} 32'$ N. Lat. (in Asus)	Time of oblique ascension $51^{\circ} 32'$ N. Lat. (in Ghatis)	Gh.	Vlg.
1. Aries	.... 1,674	— 921	753		5 1/2	
2. Taurus	.... 1,795	— 737	1,058	2 56 1/3		
3. Gemini	.... 1,931	— 307	1,624	4 30 2/3		
4. Cancer	.... 1,931	+ 307	2,238	6 13		
5. Leo	.... 1,795	+ 737	2,532	7 2		
6. Virgo	.... 1,674	+ 921	2,595	7 12 1/2		
7. Libra	.... 1'674	+ 921	2,595	7 12 1/2		
8. Scorpio	.... 1,795	+ 737	2,532	7 2		
9. Sagittarius	.... 1,931	+ 307	2,238	6 13		
10. Capricorn	.... 1,931	— 307	1,624	4 30 2/3		
11. Aquarius	.... 1,795	— 737	1,058	2 56 1/2		
12. Pisces	.... 1,674	— 921	753	2 5 1/2		
		—	—	—	—	—
		21,600		21,600	60	0

(See Table 1 for Charakhanda for latitudes $1^{\circ} 60'$).

* The Charakhandas for 52° are considered.

56. Duration of Signs in South Latitudes.—The additive and subtractive Charakhandas of North Latitude become subtractive and additive respectively, in case of South Latitudes. For example add 162 to 1674 instead of subtracting, and the duration of Aries on 13° S. Latitude is obtained. It is to be noted that signs of short ascension in N. Latitudes are signs of long ascension in S. Latitudes.

Example 5.—Find the Rasimanas at $37^{\circ} 50'$ South Latitude, whose Charakhandas are 562, 450 and 181 respectively.

Signs	Rising period at 0° Lat. (in Asus)	Chara- Khandas at $37^{\circ} 50'$ S. Lat.	Times of oblique ascension at $37^{\circ} 50'$ S. Lat. (in Asus)	Times of oblique ascension at $37^{\circ} 50'$ S. Lat. (in Ghatis)
1. Aries	1,674	+ 562	2,236 6 12 2/3
2. Taurus	1,795	+ 450	2,245 6 14 1/6
3. Gemini	1,931	+ 187	2,118 5 53
4. Cancer	1,931	- 187	1,744 4 50 2/3
5. Leo	1,795	- 450	1,345 3 44 1/6
6. Virgo	1,674	- 562	1,112 3 5 13/
7. Libra	1,674	-- 562	1,112 3 5 1/3
8. Scorpio	1,795	- 450	1,345 3 44 1/6
9. Sagittarius	1,931	- 187	1,744 4 50 2/3
10. Capricorn	1,931	+ 187	2,118 5 53
11. Aquarius	1,795	+ 450	2,245 6 14 1/6
12. Pisces	1,674	+ 562	2,236 6 12 2/3

CHAPTER V

Sunrise and Sunset

57. Apparent Time of Rising and Setting of the Sun.—The exact moment when the Sun first appears at the eastern horizon of a place is time of sunrise there. Since the Sun has a definite diameter, the interval between the moment of the appearance of the first ray at the horizon and the moment at which the Sun is just clear off the horizon, is some 5 or 6 minutes. If this is so, which represents the exact moment of sunrise? It has been acknowledged that it is the moment at which the centre of the solar disc rises at the eastern horizon, that marks the sunrise at the particular place. It must also be noted that on account of the refraction of the solar rays, due to the various strata enveloping the earth, the Sun is not really below the horizon when he appears to be so but is really below the horizon by about a few minutes of arc (Rekha). But we can take the apparent time as almost correct and need not worry ourselves with the so-called delicate correct time of rising.

58. Apparentoon.—This is marked when the centre of the Sun is exactly on the meridian

of the place. The apparent noon is almost the same for all places.

59. Ahas and Ratri.—Ahas is the duration of the day, *i.e.*, the duration of time, from sunrise to sunset, and Ratri is the duration of time, from sunset to sunrise. On the equator, the Ahas and Ratri are always 30 ghatis or 12 hours each, while in other latitudes, the sum of Ahas and Ratri will be 24 hours, whereas the interval between sunrise and sunset and *vice versa*, varies, this variation depending upon the declination of the Sun and the latitude of the place.

The duration of *Ratri* in a place expressed in arc corresponds to the Sun's nocturnal arc and that of the day to his diurnal arc. If we knew either of these arcs, we could find out sunrise and sunset.

In dealing with the question of the Precession of the Equinoxes, we have called attention to the fact that on the days when the Sun occupies the equinoctial points, *i.e.*, twice a year, he is visible for 12 hours at all places and invisible for a similar period. On these two days the declination (kranti) of the Sun is zero.

During his northerly course, when he will have a north declination, the duration of days is longer than that of nights, *i.e.*, he is visible for

longer period in north latitudes, while the reverse holds good for south latitudes. During his southerly course, when he will have a south declination, the duration of days is longer than that of nights in south latitudes, and the reverse holds good for north latitudes.

60. Hindu Method of Determination of Sunrise and of Sunset.—First of all note the latitude of the place for which sunrise and sunset are to be determined and then its Charakhandas. Find out the position of Nirayana Sun* at approximate sunrise on that day. This can be done from any local reliable almanac. (See Chapter VII for determining longitudes of planets.)

To this add Ayanamsa and the Sayana Sun at sunrise is obtained: or the position of the Sayana Sun can be obtained by means of any modern ephemeris in which the position of planets are to be found for Greenwich mean noon. By converting the approximate time (local) of sunrise to Greenwich mean time, the position of Sayana Sun—for sunrise can be found out. (See Chapter VI for Conversion of Time.) Then

* The solar date marked in Hindu almanacs may be roughly taken as representing Sun's Nirayana longitude at sunrise on the particular day.

find out the Bhuja (distance from the nearest equinoctial point) as follows :

If the Sayana longitude of the Sun be less than 90° (*i.e.*, the first three signs) it itself represents the Sun's Bhuja ; if it is more than 90° and less than 180° , subtract it from 180° and the result is Bhuja ; if it is more than 180° and less than 270° (*i.e.*, more than 6 signs and less than 9 signs) subtract 180° from the Sun's Sayana longitude, the result represents Bhuja ; and if the Sayana longitude of the Sun is more than 270° and less than 360° (more than 9 signs and less than 12 signs) subtract it from 360° and the result is Bhuja of the Sun.

If the Sun's Sayana longitude is—Bhuja is

(1)	between	0°	90°	Sun's Sayana long. itself.
(2)	"	90	180	180° —Sun's Sayana long.
(3)	"	180	270	Sun's Sayana long.— 180° .
(4)	"	270	360	360° — Sun's Sayana long.

The Charakhandas (ascensional differences) given in three numbers are called the Adi (first), Madhya (middle) and Anthya (last) Charakhan-das. The Adicharakhanda itself will be the first khanda; this *plus* the madhya, the second khanda;

and the sum of the three (Charakhandas), the third khanda.

Now divide the Bhuja (if it is more than 30°) by 30. The quotient represents the khanda. Keep the remainder as it is and then apply the rule :

As 30 degrees : the remainder : : the Charakhanda (Madhya, if Bhuja is more than 30° and less than 60° and Anthya if it is more than 60° and less than 90°): the required quantity.

This required quantity must be added to the equivalent of the khandas represented by the quotient obtained by dividing the Bhuja by 30. The result is *chara*.

If the Bhuja is less than 30° then apply the rule :

As 30 degrees : the degree (represented by Bhuja) : : the Adicharakhanda : the required quantity.
Then the quantity itself will be chara.

If the Sayana Sun is in Uttara (north) Gola (hemisphere), i.e., from Aries to Virgo, add chara to 15 ghati (6 hours). If he is in the southern Gola (from Libra to Pisces) subtract this from 15 ghati. The result is Dinardha (half diurnal duration). Twice this is the length of day. This deducted from 60 ghati (24 hours) gives the length of night. Convert Dinardha into hours, etc., and add and subtract this figure to and

from 12 noon. The apparent time of sunset and of sunrise respectively of the place are obtained.

Exempla 6.—Find the length of day and of night and the apparent time of sunrise and of sunset at a place on 13° N. Lat. and $5h. 10m. 20s.$ E. long. on 16th October 1918 (A.D.),

	Adi (First)	Madhya (Middle)	Anthya (Last)
Charakhandas	162	130 and	53 (in Asus)

or

27 21.7 and 8.8 (in Vighatis)

(27) (22) (9)

I II III

∴ Khandas = 27 49 and 58

Nirayana Sun at approximate

sunrise (6 a.m.) — 180° $55'$ $0''$

Ayanamsa	—	21	15	57
----------	---	------	----	----	----

∴ Sayana Sun — 202° $10'$ $57''$

— $202^{\circ} 11' =$ Libra $22^{\circ} 11'$

Since the Sayana Longitude of the Sun is between $180^{\circ} - 270^{\circ}$ apply Rule 3 to find out the Bhuja.

Rule 3.—Sun's Sayana Long. — 180° = Bhuja.

$202^{\circ} 11' - 180^{\circ} = 22^{\circ} 11'.$

Since in the above, Bhuja, viz., $22^{\circ} 11'$ is less than 30° , apply the following rule to get Chara :

As 30 degrees : the degrees represented by Bhuja :: Adicharakhanda : the required quantity = x.

$\therefore 30 : 22^\circ 11' :: 27 : \text{the required quantity} = x.$

$22^\circ 11'$

$$\therefore x = \frac{22^\circ 11'}{30} \times 27 = 19.96 \text{ vighatis or } 20 \text{ vig.}$$

$\therefore x = 20 \text{ vighatis} = \text{Chara itself.}$

$\therefore \text{Sayana Sun is in Dakshina Gola (between Libra and Pisces)}$

$\therefore \text{Dinardha} = \text{Gh. (15.0)} - \text{Gh. (0.20)}$
 $(\text{Half diurnal duration}) = \text{Gh. 14.40.}$

$\therefore \text{Length of day} = \text{Gh. } 14.40 \times 2 = \text{Gh. } 29-20.$

$\therefore \text{Length of night} = \text{Gh. } 60 - \text{Gh. (29-20)} = \text{Gh. } 30.40.$

Dinardha = Gh. 14-40 ; in hours = 5h. 52m.

12 noon = 5h. 52m. = 6h. 8m.

$\therefore \text{Apparent Time of Sunrise} = 6h. 8m. (\text{A.M.})$

12 noon + 5h. 52m. = 5h. 52m. (P.M.) sunset.

Example 7.—Find the length of day and of night and apparent time of sunset and of sunrise at 36° N. Lat. on 7th January 1932.

Charakhandas = 522.6, 418.08 and 174.18 (in Asus)

	=	87	70	and	29	(in Vighatis)
		I	II		III	

\therefore	Khandas	=	87	157	186	
			S.	D.	M.	S.

$\text{Nirayana Sun} =$	8	24	2	13	
-------------------------	---	----	---	----	--

$\text{Ayanamsa} =$	+ 0	21	27	41	
---------------------	-----	----	----	----	--

$\therefore \text{Sayana Sun} =$	9	15	29	54	
----------------------------------	---	----	----	----	--

$= 15^\circ 30' \text{ Capricorn.}$

	S.	D.	M.
	12	0	0
— Sayana Sun —	9	15	30
Bhuja —	2	14	30 = $74^\circ 30'$.

Divide Bhuja by 30 = $\frac{74^\circ 30'}{30}$ — Khanda 2

and remainder $14^\circ 30'$.

As 30 : $14\frac{1}{2}^\circ$:: 29 : the required quantity = x.

$$\therefore x = \frac{14\frac{1}{2}}{30} \times 29 = 14 \text{ Vighatis.}$$

$14 \text{ Vig.} + 157 \text{ (Khanda II)} = 171 \text{ Vig.} = \text{Chara.}$

Gh. 15 — (2-51 Gh.) = 12-9 Gh. = Dinardha 4h. 51m 36s.

∴ Gh. 24-18 = length of day.

∴ Gh. 35-42 = length of night.

12 noon — 4h. 51m. 36s. = 7h. 8m. 24s. (A.M.)

sunrise (Apparent time) = 7h. 8m 24s. (A.M.)

12 noon + 4h. 51m. 36s. = 4h. 51m. 36s. (P.M.)

sunset (Apparent time).

I have given above the Hindu method of finding out the apparent time of sunrise and of sunset. Some say, that this method is riddled with certain errors. I have spoken sufficiently about the supposed errors that have crept into Hindu calculations in the Introduction to this book. I shall also give below the modern method of the calculation of sunrise and of sunset and the reader can adopt whichever he prefers. I shall apply this method to the example worked out for the Hindu method so that the results in both the

cases may be compared. Those who want to adopt the Hindu method may do so ; and those who are in a position to work out problems in trigonometry may employ the modern method. I have also given in the Appendix Tables the times of sunrise and sunset for important places.

61. Modern Method of Determination of Apparent Time of Sunrise and of Sunset.*—First convert the local approximate time of sunset (or sunrise) into Greenwich Mean Time (see next Chapter) for which ascertain Sun's declination from the ephemeris. Note down the latitude of the place and apply the following formula :

$$\text{Log Tan. Dec. of Sun} + \text{Log Tan Lat. of place} = \text{Log Sin Ascensional Difference.}$$

Subtract ascensional difference from 90° if Dec is South and add Asc. difference to 90° if Dec. is North.

(The reverse holds good for places in south latitudes)

Convert the resulting degrees into hours, minutes, etc., at 15° = 1 hour. The result is local apparent time of setting. This subtracted from 12 hours gives local apparent time of sunrise.

*There is a slight difference between the results obtained according to Hindu and modern methods which may be safely ignored for astrological purposes.

Example 8.—Find the apparent time of sunrise and of sunset at a place on 13° N. Lat. and 5h. 10m. 20s. E. Long. on 16th October 1918.

Approximate time of sunset = 6 p.m.

This converted to G.M.T. H. M. S.

(Greenwich Mean Time) = 12 49 40 (P.M.)

The difference between Greenwich Mean Noon and G.M.T. is only 49m. 40s. Therefore we may take the declination of the Sun at G.M.N. on 16th October. The declination may be determined for 12h. 49m. 40s. or 12-50 P.M. by considering Sun's motion (in dec.) in 24 hrs. and thus his proportional motion for 50m.

Decln. of the Sun on October 16th at G.M.N. = $81^{\circ} 41' S.$

$\therefore \text{Log Tan } 8^{\circ} 41' + \text{Log Tan } 13^{\circ} \approx \text{Log Sin Asc. Diff.}$

$$= 9.1839 + 9.3634 = 8.5473 = \text{Sin } 2^{\circ} \text{ (roughly)}$$

$\therefore \text{Log Sin Asc. Difference} = \text{Log Sin } 2^{\circ}$

$\therefore \text{Asc. differences} = 2^{\circ}$

\therefore Declination is south : subtract this from 90°

$$\therefore 90^{\circ} - 2^{\circ} = 88^{\circ}$$

$88^{\circ} 0' - 5h. 52m. (\text{P.M.}) = \text{Local apparent time of setting.}$

$\therefore 12h. - 5h. 52m. \approx 6h. 8m. \text{ A.M.} = \text{Local apparent time of rising.}$

Example 9.—Find the apparent time of sunrise and of sunset on 7th January 1932 at a place whose Lat. is 36° N. and Long. 90° E.

Approximate time of sunset = 6 p.m.

This converted into G.M.T. = 12 noon.

*Seven figure logarithmic Tables may be consulted for greater accuracy.

Since G.M.T. corresponding to 6 P.M. has become the same as Greenwich Mean Noon, we may take the declination of the Sun at G.M.T. on 7th January
 \therefore Sun's declination at 12 noon (G.M.T.) or at the sunset at the required place = $22^{\circ} 30'$ S.

$$\therefore \text{Log Tan } 22^{\circ} 30' + \text{Log Tan } 36^{\circ} = \text{Log Sin Asc. Diff.}$$

$$= 9.6172 + 9.8613 = 19.4785 - 9.4785 = \text{Log. Sin } 17^{\circ} 31'$$

$$\therefore \text{Log Sin Asc. Difference} = \text{Log Sin } 17^{\circ} 31'$$

$$\therefore \text{Asc. Difference} \approx 17^{\circ} 31'$$

\therefore Dec. is South subtract this from 90°

$$\therefore 90 - 17^{\circ} 31' = 72^{\circ} 29'$$

$$72^{\circ} 29' = 4\text{h. } 49\text{m. } 56\text{s.} \approx \text{Local apparent time of setting}$$

$$= 4\text{h. } 49\text{m. } 56\text{s. (P.M.)}$$

$$\therefore 12\text{h.} - 4\text{h. } 49\text{m. } 56\text{s.} = 7\text{h. } 10\text{m. } 4\text{s.} = \text{Local apparent time of rising (A.M.)}$$

62. Equation of Time.—This is the difference between Mean Time and Apparent Time. Equation of time is the value expressed in time of the angle between the declination circles of the true and mean Sun. We obtain by the above methods the apparent time of sunrise. For this must be applied the equation of time in order to get the mean time, i.e.,

Equation of Time = Mean Time — Apparent Time at any moment.

(vice versa if A.T. is > M.T.)

The equation of time at a moment is positive or negative according as the apparent time is less or greater than mean time.

63. Method of the Determination of Equation of Time to get Mean Time from Apparent Time.—From any ephemeris find the Sidereal Time and the Longitude (Sayana) of the Sun for G.M.N. or the G.M.T. corresponding to the approximate time of sunrise or sunset at the required place, on the required date. Find the Sidereal Time at which this particular degree (of Sun's Sayana Longitude referred to above) is on the cusp of the tenth house of Greenwich or any place. This will give the right ascension expressed in time of the Sun ; or we shall call this, for the sake of convenience, the Sun Time. Take the difference between the Sidereal Time and the Sun Time, and this represents the Equation of Time.*

If the Sun Time is less than the Sidereal Time, the Equation of Time must be subtracted from the Apparent Time (of sunrise or of sunset) in order to obtain the Local Mean Time of rising or of setting. If the Sidereal Time is less than Sun Time, add the Equation of Time for obtaining the Local Mean Time.

* It will do if the Equation of Time is found out for G.M.N.

Example 10.—Find the Equation of Time on 16th October 1918, as applied to apparent time at sunrise at Bangalore.

Approximate time of sunrise = 6 A.M.

= 12h. 49m. 40s. (A.M.) G.M.T.

Sayana Longitude of Sun at G.M.N.

On October 15, was \equiv $21^{\circ} 43' 46''$ Libra
On October 16 \equiv $22 45 19$

Sun's Sayana Long. at 49m. 40s.

A.M.(G.M.T.) on 16th Oct. = 22 17 35
 H. M. S.

**When 22° Libra is on the cusp
of the tenth house Sidereal**

Time **13 21 20**

**When 23° Libra is on the cusp
of the tenth house Sidereal**

∴ When $22^{\circ} 17' 35''$ Libra is on
the cusp of the tenth house
the Sidereal Time

Sun Time	II	13	22	28
Sidereal Time at (G.M.T.)	II	13	36	10
∴ Equation of Time	II	-0	13	42

Equation of Time at sunrise in the above given place,
on October 16, i.e., at 12-50 A.M. (G.M.T.) was :
—14m.

This must be subtracted from the apparent time of sunrise in order to get the Mean Time of sunrise. We subtract this because Sidereal Time is greater than Sun Time.

Example 11.—Find the Equation of Time on 7th January 1932, as applied to apparent time of sunrise at Dacca.

Approximate time of sunrise = 6 A.M. = 12 midnight (G.M.T.)

Sayana Longitude of Sun at

G.M.N. on 7th January = $15^{\circ} 50' 35''$ Capricorn

∴ Sayana Longitude of Sun

at G.M.T. = $15^{\circ} 29' 1''$

When 15° Capricorn is on the cusp H. M. S.
of the 10th house Sidereal Time = 19 5 8

When 16° Capricorn is on the cusp
of the 10th house Sidereal Time = 19 9 26

∴ When $15^{\circ} 29' 1''$ = Sidereal Time = 19 7 13

∴ Sun Time = 19 7 13

Sidereal Time (G.M.T.) = 19 0 48

∴ Equation of Time at sunrise in
the above given place on 7th

January, at 12 A.M. (G.M.T.)

was	....	....	+ 0 6 25
			+ 6m.

This must be added to the Apparent Time of sunrise in order to get the Mean Time of sunrise. We add this because Sun Time is greater than Sidereal Time.

64. Mean Time of Sunrise and Sunset.—

Add or subtract the equation of time to or from the apparent time (of sunrise or of sunset, (the respective mean time is obtained. The equation of time is positive (*i.e.*, must be added to the

apparent time) if the Sun time (see Article 55) is greater than Sidereal Time and is negative (*i.e.*, must be subtracted from the apparent time) if the Sun Time is less than Sidereal Time.

Example 12.—Find the Mean Time of sunrise on October 16th, 1918 A.D. at a place on 13° N. Lat. and 5° 10m. and 20s. E. Long. H. M.

The apparent time of sunrise was 6 8 A.M. (Ex. 8)
 The equation of time (as applied
 to apparent time at sunrise) was — 0 14 (Table III)
 ∴ the mean time of sunrise on
 October 16th was 7 54 A.M.

Example 13.—Find the Mean Time of sunrise on 7th January 1932 at a place on 36° N. Lat. and 6 hours E. Long.

H. M.

The apparent time of sunrise was 7 10 A.M. (Ex. 9)
 The equation of time (as applied
 to apparent time of sunrise)
 was +0 6 (Table III)
 ∴ the mean time of sunrise there
 on 7th January was 7 16 A.M.

65. Easy Method for Finding the Mean Time of Sunrise and of Sunset.—I have elaborately discussed in the above pages the method of calculating the Apparent Time of sunrise and of sunset for any place on any day, with suitable examples according to both the Hindu and modern systems and the determination of Equation of Time (as

applied to the apparent time of sunrise or of sunset) in order to obtain the Mean Time of (of local sunrise or of sunset). I leave it to the discretion of the reader to choose the method he best prefers.

The who are not familiar with the method of consulting the Trigonometrical and Logarithmic Tables, a knowledge of which is essential for applying modern methods are requested to adopt the following rules :—

1. Calculate the Apparent Time of sunrise and of sunset according to the Hindu method (as given in Article 60).
2. Then instead of working out the problem for ascertaining the equation of time. the reader may conveniently find out the Equation of Time by referring to Table III, given at the end of the book.
3. Then apply this Equation of Time to get the Mean Time of sunrise and of sunset by adopting the rules contained in Article 63.
4. Table V gives Mean Time of sunrise and of sunset for different latitudes.

CHAPTER VI

Measure and Conversion of Time

66. Hindu Chronology.—The division of time is peculiar to the Hindu. It begins with a Tarpara and ends in a Kalpa (equal to 4,320,000,000 Sidereal years). The Hindu day (an apparent solar day) begins from sunrise and ends with the next sunrise. The devision of time is thus—

60 Tarparas	=1 Para
60 Paras	=1 Vilipta
60 Viliptas	=1 Lipta
60 Liptas	=1 Vighati
60 Vighatis	=1 Ghati
60 Ghātis	=1 Day

I shall also introduce to the readers the three kinds of days in vogue, though it is not worthwhile wasting any time over remembering them.

(a) **Sidereal Day.**—This is equal to 23h. and 56m. of Mean Solar Time. This is known as *Nakshatra Dina* among the Hindus and this is the time the earth takes to rotate once with reference to any fixed star :

(b) **Apparent Solar Day.**—This is known as the *Savana Dina*. This is longer than the Sidereal day by about four minutes. According to *Suryasidhanta* the Savana day is reckoned from snurise to sunrise.

(c) **Mean Solar Day.**—This is reckoned by considering the average length of all the days in a year.

Two kinds of months are generally in vogue among the Hindus, viz., Chandramana and Souramana. The Chandramana is based upon the movements of the Moon in the celestial circle. The lunar month has 30 lunar days or Tithis. It is the Moon's synodic period from New Moon to New Moon. The solar month is the time, the Sun takes to move in one sign. The month varies in duration according to the number of days the Sun takes to move in a sign. When the Sun enters into the new sign during the course of the lunation, the month is intercalary (Adhika Masa) and is baptised by the name of that which precedes or succeeds it with some prefix to distinguish it from the regular month.

The Hindus have a solar rather sidereal year, which is their astronomical year, and a lunar year which is their civil year.

The lengths of the various years are as follows according to modern calculations :

	D.	H.	M.	S.
The Tropical year	... : 65	5	48	46
The Sidereal year	... 365	6	9	9
The Anomalistic year	... 365	6	13	48

According to *Suryasiddhanta*, the length of the solar year (sidereal) is 365 days, 15 ghati, 31 paras and 4 tatparas (365d. 6h. 12m. and 36s. 56) whereas according to *Siddhanta Siromani*, the length of the solar (sidereal) year is 365 days, 5 ghati, 30 paras and 22.5 tatparas (365 d. 6h. 12m. and 9s.) The Savana year has 360 days, the lunar year has 354 days and the Nakshatra (sidereal) year has 324 days.

67. Local Mean Time.—The Local mean time of birth is very essential for the calculation of the horoscope. When the Sun is crossing the meridian of any place, it is twelve o'clock or midday at that place according to "Local time". It is noon of local time on any day when the Sun reaches its highest point in the day. It is to be specially noted that the time shown by clocks and watches at any particular day is hardly the correct local mean time. Such times are subject to rectification by observing the course of events in one's life. Great care should be taken to see that

watches and clocks, from which birth times are recorded, are accurate. Therefore, the first thing is to ascertain the correct local mean time of birth. The local mean time of a place depends upon its longitude, evidently terrestrial. In all Hindu astrological calculations the meridian of Ujjain was being taken when reckoning time or longitude, but now Greenwich is taken as the centre for such purposes. The local time of a place (L.M.T.) say 4 degrees east of Greenwich will be 16 minutes later than Greenwich Mean Time (G.M.T.). In other words, if it is 12 noon at Greenwich, it will be 12h. 4m. (P.M.) in a place 1° E. to it, 11-56 A.M. in a place 1° W. to it and so on.

To reduce longitude into time, simply divide the number of degrees, minutes, etc., by 15 and the quotient will be the time. For instance, the longitude of Bangalore is $77^{\circ} 35'$ East of Greenwich. Dividing this by 15 we get 5h. 10m. 20s. The place being East of Greenwich, it will be 5h. 10m. 20s. (P.M.) at Bangalore—(otherwise termed as L.M.T.) when it is 12 noon at Greenwich or 8h. 10m. 20s. (P.M.) when it is 3 P.M. at Greenwich and so on.

The local mean time can be obtained by adding to or subtracting from the Greenwich

Mean Time, four minutes to every degree of longitude, according as the place is East or West of Greenwich.

The L.M.T. always synchronises with the G.M.T.

$$\text{L.M.T.} = \text{G.M.T.} \pm \text{Longitude} \div 15^\circ$$

+ if the place is East of Greenwich.

- if the place is West of Greenwich.

Example 14.—What is the L.M.T. of a place at Long 78° W. when it is 12 noon at Greenwich ?

$$\text{L M T.} = 12 \text{ noon} - \frac{78^\circ}{15^\circ} = 12 \text{ noon} - 5\text{h. } 12\text{m.}$$

$$= 6\text{h. } 48\text{m. (A.M.)}$$

(— because place is West of Greenwich)

67. Standard Time.—It is usual to choose for each country, or for each part of a large country, a standard time for use over the whole country. This standard time, as a rule, is the local time of some most important town in the country. If the birth is recorded in L.M.T., well and good; otherwise, the standard time of the country must be converted into the local mean time. The years when standard times were introduced into different countries must be ascertained (see Table IV). In India, Standard Time was introduced on 1-1-1906 and it is 5h. and 30m. past (in advance) of Greenwich Mean Time. Before this the Madras Time was the adopted Standard Time of the whole of India.

and so the standard time of that period should be increased by 9 minutes to obtain the present I.S.T. (*i.e.*, after 1-1-1906). For births that have occurred after 1-1-1906, if the time is recorded in standard time it must be converted into L.M.T. Generally our clocks show standard time. For instance, Bangalore is 5h. 10m. 20s. East of Greenwich; when it is noon at Greenwich the L.M.T. at Bangalore is 5h. 10m. 20s. (P.M.) whilst the clock at this time shows 5h. 30m. P.M. (Standard Time).

L.M.T. = Standard Time \pm Difference between local and standard longitudes (expressed in time).
 + if local longitude is $>$ Standard Longitude.
 — If local longitude is $<$ do.

68. The Standard Horoscope.—In order to illustrate the various principles described in this book, we shall consider the nativity of a female born on 16th October 1918 A.D. at 2h. 26m. P.M. (Indian Standard Time) at a place on $12^{\circ} 59'$ N. Lat. and $77^{\circ} 34'$ E. Long. This horoscope will henceforth be termed as the Standard Horoscope.

Example 15.—Find the Local Mean Time of birth in the Standard Horoscope, the Standard Long. being $82^{\circ} 30'$ East of Greenwich. 5h. 30m. ahead of G.M.T.)

Standard Longitude	=	$82^{\circ} 30'$
Local Longitude	=	$77^{\circ} 34'$

Difference between Std. Long.

and Local Long. = $4^{\circ} 56'$

$4^{\circ} 56' \approx 19m. 44s.$ in time.

∴ Local Longitude is < Standard Longitude, this time must be subtracted from the Standard Time.

∴ L.M.T. = 2h. 26m.—19m. 44s. = 2h. 6m. 16s. (P.M.)

∴ L.M.T. of Birth = 2-6-16 (P.M.)

69. Suryodayadi Jananakala Ghatikaha.—

It is customary among the Hindus to mention the time of birth as "Suryodayadi Jana nakala Ghatikaha", i.e., the number of ghatis passed from sunrise up to the moment of birth. First ascertain the local mean time of birth and of sunrise and then apply the following rule :

(24 seconds = 1 vighati ; 24 minutes = 1 ghati ; 1 hour = 2½ ghatis)

$$(\text{Birth Time} - \text{Sunrise}) \times 2\frac{1}{2} = \text{Suryodayadi Jananakala Ghatikaha.}$$

Example 16.—Find the Suryodayadi Jananakala Ghatikaha in the Standard Horoscope.

Sunrise (L.M.T.) = 5-53-40 A.M. on 16th October 1918.

Birth Time (L.M.T.) = 2-6-16 P.M.

∴ (2-6-16 P.M. — 5-53-40) × 2½ = Gh. 20-31½.

∴ Suryodayadi Jananakala Ghatikaha.

(Number of ghatis passed from sunrise upto birth) = Gh. 20-31½, or 20-32.

Example 17.—Miss N. born on 3-5-1932 at 5-45 a.m. (L.M.T.) Lat. 13° N., and 75° 0' E. Long. Find Suryodayadi Jananakala Ghatikaha

Sunrise (L.M.T.) = 5h. 42m. (A.M.)

Birth Time (L.M.T.) = 5h. 45m. (A.M.)

∴ 5h. 45m. (A.M.) — 5h. 42m. (A.M.) × 2½ = Gh. 0-7½,
= Gh. 0-8.

Suryodayadi Jananakala Ghatikaha = Vighatis 8 only.

CHAPTER VII

Graha Sphutas

(PLANETARY LONGITUDES)

70. The Hindu Almanac.—It requires a considerable amount of familiarity with the advanced portions of astronomical principles, in order to find out the longitudes of planets independently, *i.e.*, without reference to any almanac. As such I have reserved discretion to expound those principles in a separate book, and for the present, simply describe the method commonly adopted by all astrological students and adepts. Any reliable almanac will serve our purpose. There are still a few standard *Panchangas* (almanacs) which can be trusted for astrological purposes.

71. Method of Making Graha Sphutas.—If the panchanga is available for the place of birth then no trouble of conversion of time is involved ; otherwise, birth time must be converted into local time of the place, for which the almanac is calculated, in order to find out the planetary positions.

Find out the date of the birth in the almanac and note down all the details given for that day. If no planets are marked on the day of birth

then trace back and find out the position of the planet on the date, nearest to that of birth. It will be found that the planet's position will have been marked in Nakshatras (constellations) and Padas (quarters) with time of entry in ghatis into the particular pada. Find out the time at which the same planet enters the next quarter of the constellation. Mark the interval in ghatis between the entries of the planet into these two quarters. Mark also the interval between the first entry and the birth time and proceed as follows :—

Formula (a) for all Planets :

$$\frac{\text{The interval between the first entry and birth}}{\text{The interval between the two entries}} \times 3\frac{1}{2}$$

= The number of degrees traversed in that particular quarter of the nakshatra.

Formula (b) for the Moon :

$$\frac{\text{The interval between entry into the first degree of the sign and birth}}{\text{Time taken for traversing the sign}} \times 30^\circ$$

Time taken for traversing the sign

Add this to the number of degrees the planet has at the time of the first entry. Its Nirayana longitude is obtained.

Example 18.—Find the Nirayana Longitudes of the planets in the Standard Horoscope.

The Almanac for 1918 gives the following information :
 15-10-1918. Sun enters 3rd quarter of Chitta at 25-28 Gh.
 18-10-1918. Do. 4th quarter do. at 46-53 do.

Therefore the period taken by the Sun to pass through one pada or $3\frac{1}{3}$ degrees of the celestial arc is :—

Gh. Vig.

15th October 34 32 (Subtract the time of entry from 60 Gh. being the duration of a day)

16th ,, 60 0

17th ,, 60 0

18th ,, 46 53

Total Gh. 201 25 or Vighaties 12,085.

Time elapsed from the entry of the Sun into the 3rd quarter of Chitta (which is nearest to the birth, up to the moment of birth) :—

Gh. Vig.

15th October 34 32

16th ,, 20 32

Total Gh. 55 4 or Vig. 3,304.

Apply formula (a) :—The arc traversed by the Sun =

3304

_____ $\times 3\frac{1}{3}^{\circ} = 0^{\circ} 55'$.

12085

This distance, the Sun has passed in the third pada or quarter of Chitta. We know that the last two quarters of Chitta, the four of Swathi and the first three of Visakha constitute Thula (Libra).

∴ The Nirayana longitude of the Sun $\equiv 0^{\circ} 55'$ in Libra.

$\equiv 180^{\circ} 55'$ from the
1st degree of Aries.

THE MOON

		Gh. Vig.
14-10-1918 : Duration of Sravana	= 59	21
∴ Dhanishta lasts for	0	39 (Subtracting 59-21 from 60)
15-10-1918 Do.	<u>57</u>	<u>14</u>
∴ Duration of Dhanista	<u>57</u>	<u>53</u>
15-10-1918 Satabhisha lasts for	2	46 (Subtracting 57-14 from 60)
16-10-1918 Do.	<u>54</u>	<u>19</u>
∴ Duration of Satabhisha	<u>57</u>	<u>5</u>
16-10-1918 Poorvabhadra lasts for	5	41 (Subtracting 54-19 from 60)
17-10-1918 Do.	<u>50</u>	<u>48</u>
∴ Duration of Poorvabhadra	<u>56</u>	<u>29</u>

Aquarius is made up of : last 2 quarters of Dhanishta plus Satabhisha plus 3 quarters of Poorvabhadra.

$$\equiv \frac{1}{2} (57-53) + (57-5) + \frac{3}{4} (56-29) \equiv \text{Gh. } 128-23$$

i.e., The Moon takes Gh. 128-23 to travel through the sign of Aquarius.—

The interval between the Moon's entry into the first degree of Aquarius and birth time is found as follows :—

$$\frac{1}{2} (57-53) + (20-31 \frac{1}{2}) \equiv \text{Gh. } 49-28$$

Applying formula (b)

Gh. 49-28

$$\equiv \frac{\text{Gh. } 128-23 - \text{Gh. } 49-28}{2} \times 30^\circ \equiv 11^\circ 33' 33'' \text{ in Aquarius.}$$

Gh. 128-23

Moon's Nirayana position is $11^\circ 33' 33''$ in Aquarius,
i.e., $311^\circ 33' 33''$ from the first degree of Aries.

Note:—The actual ephemeral position is $311^\circ 19'$.

72. Nirayana Longitude of Planets.—The Longitudes of other planets, similarly found out, are reproduced below for ready reference :

<i>Graha (Planet)</i>	<i>Sphuta (Longitude)</i>
The Sun	180° 55'
The Moon	311 19
Mars	222 29
Mercury	181 33
Jupiter	84 3
Venus	171 12
Saturn	124 25
Rahu	234 31
Kethu	54 31

CHAPTER VIII

Lagna Sphuta

(THE ASCENDANT)

73. Lagna or Ascendant.—Lagna or the ascendant is that point of the ecliptic, which is at any time on the eastern horizon, and is expressed in signs, degrees, etc., of Stellar Aries.

74. Solar Months.—The earth is egg-shaped and rotates once in a day on its axis from west to east, and thus, all the zodaical signs are invariably exposed to the solar influence. The twelve solar months are named after the twelve zodaical signs. On the first day of Aries the first degree of that particular sign is at the eastern horizon, and the remaining signs are gradually exposed till the next day when at the sunrise, the second degree of Aries will be at the eastern horizon. The sunrise takes place in the last degree of the zodiac on the 30th day of Pisces when the solar year closes, i.e., the Lagna is that particular place or point, which is on the eastern horizon at any particular time. The sunrise determines the Udaya Lagna and the degree and the sign, in which the Sun rises, will be the ascendant at that moment. Lagna is the eastern point of the ecliptic where it meets the horizon.

75. Determination of Lagna.—First find out the true Nirayana position of the Sun and add the Ayanamsa to it so that the Sun's Sayana Longitude is obtained. Ascertain the sign of the ecliptic the Sun is in; the degrees he has traversed in it and those he has yet to pass through. The number of degrees he has gained are the Bhukthamsas, and those to cover, the Bhogyamsas. Now from the *Rasimanas* of the place, find out the *Bhogya Kala*, i.e., the time required to pass through the Bhogyamsas, thus :

Formula (a)—

$$\frac{\text{Period of rising sign where the Sayana Sun is}}{30^\circ} \times \text{Bhogyamsa} = \text{Bhogya Time}$$

Now from the *Iskta Kala* (the time for which the Lagna is to be found) subtract the Bhogya time and from the remainder subtract the periods of rising of the next successive signs as long as you can. Then at last you will find the sign, the rising period of which being greater than the remainder, you will not be able to subtract and which is consequently called the Ashuddha sign and its rising period the Ashuddha rising. It is evident that the Ashuddha sign is of course on the horizon at the given time. The degrees of the Ashuddha sign, which are above the horizon,

are the passed degrees and hence called the Bhuktha—are thus found :

Formula (b)—

$$\frac{30^\circ}{\text{Rising period of the Ashuddha sign}} \times \begin{array}{l} \text{The remainder of given} \\ \text{time} \end{array} = \begin{array}{l} \text{Passed degrees of the} \\ \text{Ashuddha sign} \end{array}$$

Add to these passed degrees thus determined, the preceding signs reckoned from the first point of Aries and from the total, subtract the Ayanamsa. The remainder represents the Lagna from the Stellar Aries.

Example 19.—Find the Lagna in the Standard Horoscope :

Nirayana Long. of the Sun	....	180°	55'	0"
Ayanamsa	....	+	21°	16' 41"

Sayana Long. of the Sun 202° 11' 41"

i.e., the Sayana Sun is in Libra 22° 11' 41".

∴ Bhukthamsas (passed degrees) = 22° 11' 41" or
22° 12' in Libra.

∴ Bhogyaamsas (degrees yet to pass) = 7° 48' in Libra,
7° 48'

∴ Bhogya Time = $\frac{30^\circ}{\text{Gh. 5-6}} = \text{Gh. } 1-17\frac{1}{2}$,
i.e., the Sun has to traverse in Libra for Gh. 1 17 1/2

Scorpio	....	5-20 5/6
Sagittarius	....	5-30 2/3
Capricorn	....	5-13

Total Gh. 17-22

		Gh.	Vig.
Ishta Kala ....	....	= 20	$31\frac{1}{2}$

Ghati passed till the end of

		Gh.	22
Capricorn ....	....	= 17	

Bhuktha period in the Ashuddha

		Gh. 3	$9\frac{1}{2}$
sign, viz., Aquarius ....	....	

The Bhukthamsas correspond to the above Bhuktha
time : Applying—

360°

Formnla (b) = $\overline{\text{Gh. } 4-37\frac{1}{2}}$ \times Gh. $3-9\frac{1}{2}$ = $20^\circ 29' 2\frac{1}{2}^\circ$
(Aquarius).

		$20^\circ 29' 26^\circ$
∴ The Sayana Lagna	.....

		$21^\circ 16' 41^\circ$
Less Ayanamsa	.....

		$29^\circ 12' 39''$
∴ The true Lagna	.....

or $29^\circ 13'$.

The Lagna of Standard Horoscope is $29^\circ 13'$, Makara
or Capricorn : or converting this into degrees,*
it is $29\frac{1}{2}^\circ 13'$ from the first point of Stellar Aries.

Now adding 180° to this, viz., the Udaya Lagna, the
Asta Lagna (Descendant) is obtained.

*The correct Longitude of Langa is $28^\circ 27'$ in Nirayana Capricorn
as per calculations based on modern astronomical ephemerides—
see also Chapter XI.

76. **Rasi Kundali.**—This is the zodiacal diagram representing a picture of the heavens at the time of birth. The diagram given below is the one generally in vogue in South India.

*	☿	♂ Mars	□ Jupiter
Moon	MAP OF THE HEAVENS		♃
♑ Ascdt.			♄ Saturn
♐	☿ Mars Rahu	♃ Merc. Sun	♀ Venus

CHAPTER IX

Dasama Bhava Sphuta

(TENTH HOUSE OR THE MID-HEAVEN)

77. **The Dasama Bhava.**—This is also known as the Madhya Lagna. It is on the correct determination of this that the entire fabric of the horoscope rests. In fact, all the other Bhavas (Houses) are very easily arrived at, after the longitude of the Dasama Bhava has been definitely ascertained. In the astronomical language, the Madhya Lagna may be described as the culminating point of the ecliptic on the meridian. Astrologically speaking, the Dasama Bhava plays a very important part in the profession, rather the means of livelihood of a person—otherwise known as *Karma*.

78. **Rasi Chakra.**—A broad distinction must be mentioned between the Rasi Chakra (see Art. 76) and the Bhava Chakra (see Art. 81) so that the reader does not mistake the one for the other. The Rasi Chakra is simply a figure of the fixed zodiac with the limits and occupants of its 12 signs as well as Lagna clearly marked. Each sign is just one-twelfth part of the zodiac made up of 30 ecliptic degrees.

79. Conception of Bhava Chakra.—The conception prevalent amongst some astrologers that the Rasi Chakra and the Bhava Chakra are the same, is erroneous. After the Lagna Sphuta (longitude of the ascendant) has been determined, the limits and durations of other Bhavas have to be ascertained. In India, there are two schools of thought bearing on the question of Bhava Sphutas (house-division). According to one view, shared by a vast majority of people not only in India but also in Europe and America, the length of each Bhava will be 30 degrees—the influence extending 15 degrees on either side of the ascending degree (equal house system). According to the other view, this system is unscientific because it ignores the relationship between the ecliptic and equator which should be considered for determining the dimensions of the Bhavas. Classical writers like Sripathi favour the determination of Bhavas on the lines given in the following paragraphs. In our own humble experience extending for nearly 35 years the equal-house system appears to be yielding more satisfactory results. The student of astrology need not concern himself with such controversial issues. He may safely follow the Sripathi (known in the West as Porphyry method), expounded in the following pages.

81. **Bhaskara's Definition.**—Bhaskaracharya describes a Bhava Chakra thus: "The point where the ecliptic cuts the horizon in the East is known as the Rising Lagna, and the point where the ecliptic cuts the horizon in the west is known as the Setting Lagna and the points where the meridian of the place cuts the ecliptic are known as the Zenith Lagna (above the earth) and the Nadir Lagna (below the earth)."

82. **Bhava Chakra.**—This is an unequal marking of the ecliptic into twelve divisions (Houses) with reference to the latitude of the place and the moment of birth. (See next Chapter for the definition of a House). The Bhava Sphuta involves elaborate processes such as the determination of the limits—cusps of the various *Bhavas* (Houses)—comprehended as *Bhava Sandhis* and other details connected with them, which evidently form the subject-matter of the succeeding chapter.

83. **Method of Determination of the Mid-heaven.**—The interval between the midday and the time of the day indicated by the position of the Sun is termed as *Natha*, i.e., the meridian distance. This Natha may be either *Prag*, i.e., eastern or *Paschad*, i.e., western. It is *Prag* between midnight and midday and *Paschad*

between midday and midnight. The *Pragnatha* comprehends two conditions, viz.:

- (1) the distance between the Sun and the Meridian when the birth occurs after sunrise, and
- (2) the distance between the Meridian and the Sun when the birth occurs before sunrise, i.e., when the Sun is still below the eastern horizon.

Similarly the *Paschadnatha* also includes two conditions, viz. :

- (1) the distance between the Meridian and the Sun if the birth happens before sunset, and
- (2) the distance between the Meridian and the Sun after he has set. Natha when subtracted from 30 ghati gives *Unnatha*.

Here it must be noted that the Meridian refers to apparent noon and the Sun refers to the birth time

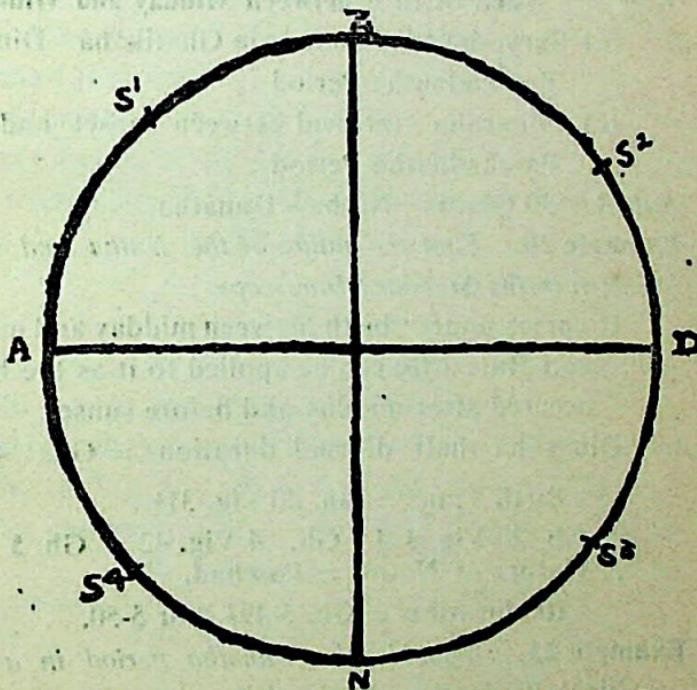
After clearly understanding the meaning and significance of the words *Natha* and *Unnatha*, ascertain, if the birth has fallen in *Pragnatha* or *Paschadnatha* : in *Pragnatha*,

- (a) if the birth has occurred after sunrise, deduct the birth time (in ghati) from *Dinardha* (half diurnal duration);
- (b) If it has occurred before sunrise add *Dinardha* to the ghati elapsed from the birth time upto sunrise.

The result in both the cases is *Pragnatha*, i.e., *Pragnatha* is indicated by the time, elapsed between birth moment and local apparent noon.

In Paschadnatha,

- (a) if the birth has taken place in the afternoon and before sunset, deduct *Dinardha* from the birth time (in ghatis);
- (b) if the birth has occurred after sunset, add *Dinardha* to the interval between sunset and birth moment; the duration of Paschadnatha is obtained.



S^1, S^2, S^3, S^4 REPRESENT SUN POSITIONS

A=Ascendant (Udaya Lagna)

Z=Zenith or Meridian (Madhya Lagna).

D=Descendant (Astha Lagna).

N=Nadir (Patala Lagna).

Natha=Distance from S^1 to Z Both are Pragnatha

= " " S^4 to Z Both are Pragnatha

= " " Z to S^1 Paschadnatha

= " " Z to S^4 Paschadnatha

The above observations may be summarised thus :—

Rule 1 — When Birth is between Midnight and Midday:

- (a) Dinardha — Suryodayadi Jananakala Ghatikaha = Pragnatha Period.
- (b) Dinardha + interval between birth and sunrise = Pragnatha Period.

Rule 2. — When Birth is between Midday and Midnight :

- (a) Suryodayadi Jananakala Ghatikaha — Dinardha = Paschadnatha Period.
- (b) Dinardha + interval between sunset and birth = Paschadnatha Period.

Rule 3. — 30 Ghatis — Natha = Unnatha.

Example 20. Find the nature of the Natha and its duration in the Standard Horoscope.

It comes under "birth between midday and midnight" and Rule 2 (a) can be applied to it as the birth has occurred after midday and before sunset.

Dinardha (half diurnal duration) = Gh. 14 Vig. 42

Birth Time = Gh. 20 Vig. 31 $\frac{1}{2}$.

$$\therefore \text{Gh. } 20 \text{ Vig. } 3\frac{1}{2} - \text{Gh. } 14 \text{ Vig. } 42 = \text{Gh. } 5 \text{ Vig. } 49\frac{1}{2}$$

$$\therefore \text{Nature of Natha} = \text{Paschad.}$$

Its duration = Gh. 5-49 $\frac{1}{2}$ * or 5-50.

Example 21. — What is the Unnatha period in a case in which Pragnatha = 17 Ghatis ?

Applying Rule 3 we get

Gh. 30 — Gh. 17 = Gh. 13 = Period of Unnatha.

*Natha is simply the interval between the Mean Time of Apparent Noon and Mean Time of Birth. In this case the interval is L.M.T. of Birth (2-6 P.M.) — M.T. of Apparent Noon (11-46 A.M.) = 2h 20m = Gh. 5-50.

From the position of the Sayana Sun and reckoning the rising periods on the equator, find out the arc (in the reverse order) that corresponds to the Natha period. Add this to or subtract from Sayana Sun according as the Natha is Paschad or Prag. The result, diminished by Ayanamsa, gives Nirayana Madhya Lagna.

Example 22.—Deduce Nirayana Madhya Lagna in the Standard Horoscope.

Paschadnatha=Gh. 5-50 (Ex. 20).

Sayana Sun=202° 11' 41" = Libra 22° 11' 41".

The rising period of 22° 11' 41" in Libra at the equator
= 22° 11' 41"

$$\frac{30^\circ}{\text{---} \times \text{Gh. } 4-39 = \text{Gh. } 3-26\frac{1}{2}}$$

Reckoning in the reverse direction, we find that
Gh. 3 Vig. 26½ are passed in Libra.

In Virgo have passed, Natha—Gh. 3 Vig. 26½ or
Gh. 5 Vig. 5 1—Gh. 3 Vig. 26½ = Gh. 2-23½.

∴ Arc corresponding to Gh. 2 Vig. 23½ Virgo (on the
equator) = $\frac{30^\circ}{\text{Gh. } 4 \text{ Vig. } 39} = \frac{26''}{31} = 15^\circ 22' 34''$

∴ The distance between the Sun and Meridian is;

Libra	....	22°	11'	41"
Virgo	....	15°	22'	34"
Meridian distance	....	37°	34'	15"

Since the Natha is Paschad, add this to Sayana Sun.

Sayana Sun	202° 11' 41"
Meridian distance	.... 37° 34' 15"
∴ Sayana Madhya Lagna	.... 239° 45' 56"
Less Ayanamsa	.... 21° 15' 57"
∴ Nirayana Madhya Lagna	218° 29' 59"
	= 218° 30'

∴ The Mid-heaven or

$$\text{Madhya Lagna}^* = 218^\circ 30'$$

$$= \text{Scorpio } 8^\circ 30'$$

In other words, this is the Longitude of the Bhava Madhya or the middle point of the tenth house.

* Based on the modern trigonometrical calculations the longitude of mid-heaven will be 216° 37'. In the Standard Horoscope modern values alone have been adopted.

CHAPTER X

Bhava Sphutas

(LONGITUDES OF HOUSES)

84. **Bhava or House.**—According to the Hindus a Bhava means one-third of the arc of the ecliptic intercepted between any two adjacent angles, viz., the Udaya Lagna (Eastern Horizon), the Patala Lagna (Lower Meridian), the Asta Lagna (Western Horizon), and the Madhya Lagna (Upper Meridian.)

85. **Bhava Madhyas.**—The points of trisection of the ecliptic arcs referred to above are the *Bhava Madhyas* or the mid-points of the Bhavas.

86. **Kendra Bhavas.**—These are the four angular houses in a horoscope, viz., the Udaya Lagna, the Patala Lagna, the Asta Lagna and the Madhya Lagna (Article 83) and they are considered very important astrologically.

87. **Determination of Kendra Bhavas.**—The preceding two chapters deal exhaustively with the method of determining the Ascendant and the Mid-heaven—two of the Kendra Bhavas. The Asta Lagna (Descendant or Western Horizon) and

the Patala or Rasatala Lagna (Lower Meridian) are determined thus :—

Rule 1.—Udaya Lagna (Ascendant or East Horizon)
 $+180^\circ = \text{Asta Lagna (Descendant or West Horizon).}$

Rule 2.—Madhya Lagna $+180^\circ = \text{Rasatala Lagna.}$
 $(\text{Upper Meridian}) + 180^\circ = (\text{Lower Meridian}).$

Example 23.—Determine the Longitudes of the Asta Lagna and Patala Lagna in the Standard Horoscope.

$$\text{Udaya Lagna} = 298^\circ 27'$$

$$\text{Madhya Lagna} = 216^\circ 36'$$

(Applying Rule 1)

$$\therefore 298^\circ 27' + 180^\circ = 118^\circ 27' \text{ (Expunge } 360^\circ).$$

(Applying Rule 2)

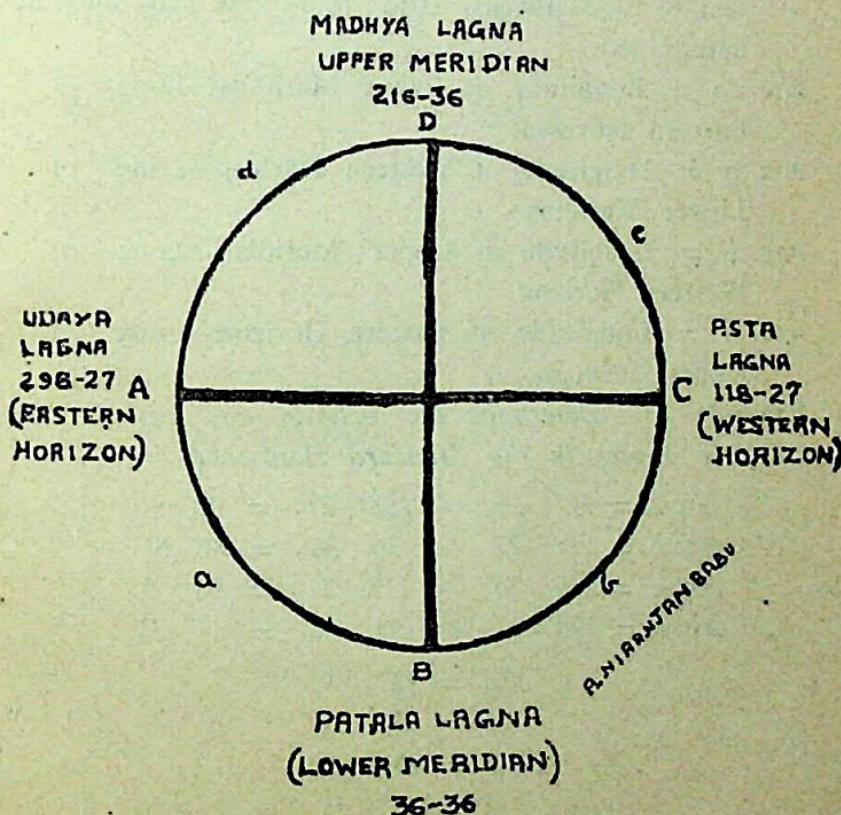
$$\therefore 216^\circ 36' + 180^\circ = 36^\circ 36' \text{ Expunge } 360^\circ.$$

$$\therefore \text{Asta Lagna} = 118^\circ 27'$$

$$\text{Patala Lagna} = 36^\circ 36'.$$

88. Non-Angular Houses—These are the houses between the angular ones. For instance, angular houses are the I (Eastern Horizon)—IV (Lower Meridian)—VII (Western Horizon)—and X (Upper Meridian). The rest, viz., II, III, V, VI, VIII, IX, XI and XII are the non-angular houses otherwise known as the Panapara Bhavas (Succedent Houses), and the Apoklima Bhavas (Cadent Houses)—see Articles 22 and 23. The Madhyas of these Bhavas are the points of trisection referred to above (Articles 83 and 84).

89. Determination of Bhava Madhyas of Non-angular Houses.—There are four angles in a Bhava Chakra. First ascertain—rather determine the ecliptic arcs between these four angles, viz., (a) the arc between the Eastern Horizon and the Lower Meridian; (b) between the Lower Meridian and the Western Horizon; (c) between the Western Horizon and the Upper Meridian; and (d) between the Upper Meridian and the Eastern Horizon.



A, B, C, D = Angular Houses.
a, b, c, d = Ecliptic arcs.

Trisect each arc: for instance, trisect arc a . The result is $1/3 a = a/3$. Add this to the Longitude of the Bhava Madhya of the Udaya Lagna and that of the II Bhava (Madhya) is obtained. To the Longitude of the II Bhava add $a/3$; that of the III is obtained. Again trisect arc b . The result would be $b/3$; add $b/3$ to the Longitude of the Lower Meridian; that of the V Bhava is obtained. Similarly deal with the other arcs for obtaining the Madhyas of the rest of the Bhavas. The four arcs may thus be determined.

Arc a = Longitude of Lower Meridian—Long. of Eastern Horizon.

Arc b = Longitude of Western Horizon—Long. of Lower Meridian.

Arc c = Longitude of Upper Meridian—Long. of Western Horizon.

Arc d = Longitude of Eastern Horizon—Long. of Upper Meridian.

Example 24.—Determine the ecliptic arcs between the four angles in the Standard Horoscope.

$$\text{Arc } a = 36^\circ 36' - 298^\circ 27' = 98^\circ 9'$$

$$\text{Arc } b = 118^\circ 27' - 36^\circ 36' = 81^\circ 51'$$

$$\text{Arc } c = 216^\circ 36' - 118^\circ 27' = 98^\circ 9'$$

$$\text{Arc } d = 298^\circ 27' - 216^\circ 36' = 81^\circ 51'$$

$$*a = 98^\circ 9'$$

$$b = 81^\circ 51'$$

$$c = 98^\circ 9'$$

$$d = 81^\circ 51'$$

*Note.—Arc $a = c$ and Arc $b = d$.

Example 25.—Find the Bhava Madhyas of the Non-angular Houses in the Standard Horoscope.

$$\begin{aligned}\text{Long. of the Udaya Lagna} &= 298^\circ 27' \\ \text{Arc } a^* &= 98^\circ 9'\end{aligned}$$

∴ Trisecting Arc a , we get :

$$\begin{array}{r} a \quad 98^\circ 9' \\ \hline - = - = 32^\circ 43' \\ 3 \quad 3 \end{array}$$

$$\begin{aligned}\therefore 298^\circ 27' + 32^\circ 43' &= 331^\circ 10' = \text{II Bhava} \\ 331^\circ 10' + 32^\circ 43' &= 3^\circ 53' = \text{III Bhava}\end{aligned}$$

$$\begin{aligned}\text{Long. of Lower Meridian} &= 36^\circ 36' \\ \text{Arc } b &= 81^\circ 51'\end{aligned}$$

∴ Trisecting Arc b , we get :

$$\begin{array}{r} b \quad 81^\circ 51' \\ \hline - = - = 27^\circ 17' \\ 3 \quad 3 \end{array}$$

$$\begin{aligned}\therefore 36^\circ 36' + 27^\circ 17' &= 63^\circ 53' = \text{V Bhava} \\ 63^\circ 53' + 27^\circ 17' &= 91^\circ 10' = \text{VI Bhava}\end{aligned}$$

$$\text{Long. of Western Horizon} = 118^\circ 27'$$

$$\text{Arc } c \qquad \qquad \qquad 98^\circ 9'$$

$$\therefore c/3 \qquad \qquad \qquad = 32^\circ 43'$$

$$\begin{aligned}\therefore 118^\circ 27' + 32^\circ 43' &= 151^\circ 10' = \text{VIII Bhava} \\ 151^\circ 10' + 32^\circ 43' &= 183^\circ 53' = \text{IX Bhava}\end{aligned}$$

$$\text{Long. of Upper Meridian} = 216^\circ 36'$$

$$\text{Arc } d \qquad \qquad \qquad = 81^\circ 51'$$

$$\therefore d/3 \qquad \qquad \qquad = 27^\circ 17'$$

$$\begin{aligned}\therefore 216^\circ 36' + 27^\circ 17' &= 243^\circ 53' = \text{XI Bhava} \\ 243^\circ 53' + 27^\circ 17' &= 271^\circ 10' = \text{XII Bhava}\end{aligned}$$

Example 26.—Mark the Bhava Sphutas in the Standard Horoscope.

		Bhava (House)	Sphuta (Longitude)
I	Lagna or the	Thanu Bhava	= 298° 27'
II	„	Dhana „	= 331 10
III	„	Bhratru „	= 3 53
IV	„	Matru „	= 36 36
V	„	Putra „	= 63 53
VI	„	Satru „	= 91 10
VII	„	Kalatra „	= 118 27
VIII	„	Ayur „	= 151 10
IX	„	Dharma „	= 183 53
X	„	Karma „	= 216 36
XI	„	Labha „	= 243 53
XII	„	Vraya „	= 271 10

90. Bhava Sandhis.—These are the junc-tional points of the two consecutive Bhavas. The potency of a Bhava will be at its full in the Bhava Madhya and hence, it must begin somewhere and end somewhere. The influence of a planet will gradually rise when approaching Bhava Madhya, while it gradually diminishes from Bhava Madhya till it is practically nil at the Bhava Sandhi. The place or the point where the influence of the Bhava begins is the Arambhasandhi and the place where it ends is the Virama-sandhi. The Arambha-sandhi may be termed as the first point of the house, and the Virama-sandhi, the last point. For instance, the

Arambha-sandhi of the first Bhava will be the end-point of the 12th Bhava. Similarly the Virama-sandhi of the first Bhava will be the end-point of the Lagna and the Arambha-sandhi of the second house and so on. In other words the sandhi of a Bhava represents the beginning of the influence of one Bhava and termination of the influence of the Bhava preceding it.

In order to know the exact amount of the influence that a planet exercises, as a result of its position in a particular Bhava, it becomes necessary to determine the sandhis of the various Bhavas.

91. Determination of Bhava Sandhis.—
Add the longitudes of two consecutive Bhavas and divide the sum by 2. The result represents sandhi. For instance, in the Standard Horoscope adding the longitudes of first and second Bhavas and dividing the sum by 2, we get:—

$$\frac{298^\circ 27' + 331^\circ 10'}{2} = \frac{629^\circ 37'}{2} = 314^\circ 48' 30''$$

i.e., Aquarius $14^\circ 48' 30''$ is the sandhi-point between the I and II Houses; or the Virama-sandhi of the I Bhava is $314^\circ 48' 30''$ and the Arambha-sandhi of the II Bhava is $314^\circ 48' 3''$.

It will be sufficient if sandhis for 6 Bhavas are determined as those of the rest (opposite six houses) could be obtained by adding 180° to each of them.

Example 27.—Find the Longitudes of the Arambha-sandhis of the twelve Bhavas in the Standard Horoscope.

Arambha-sandhi						
I	(271° 19' + 298		27')	÷ 2	÷ 284° 48'	30"
II	(298 27 + 331		10)	÷ 2	+ 314	48 30
III	(331 10 + 3		53)	÷ 2	+ 347	31 30
IV	(3 53 + 36		36)	÷ 2	÷ 20	14 30
V	(36 36 + 63		53)	÷ 2	÷ 55	14 30
VI	(63 53 + 91		10)	÷ 2	÷ 77	31 30

The Arambha, Madhya and Anthya of the Bhavas are thus situated :—

Bhava	Arambha	Madhya	Anthya
I	284° 48' 30"	298° 27'	314° 48' 30"
II	314 48 30	331 10	347 31 30
III	347 31 30	3 53	20 14 30
IV	20 14 30	36 36	50 14 30
V	50 14 30	63 53	77 31 30
VI	77 31 30	91 10	104 48 30
VII	104 48 30	118 27	134 48 30
VIII	134 48 30	151 10	167 31 30
IX	167 31 30	185 53	200 14 30
X	200 14 30	216 36	230 14 30
XI	230 14 30	243 53	257 31 30
XII	257 31 30	271 10	248 48 30

92. Poorva and Uttara Bhagas of Bhavas —

The Poorva Bhaga is that part of the Bhava which first rises and the Uttara Bhaga is the part that next rises. They can be thus determined :

Rule 1.—Poorva Bhaga of a Bhava=Long. of the Bhava Madhya—Long. of the Arambha-sandhi.

Rule 2.—Uttara Bhaga=Long. of Virama-sandhi—Long. of the Bhava Madhya.

Rule 3.—Length of each Bhava=Lengh of Poorva Bhaga + Length of Uttara Bhaga.

Example 28.—Find the Poorva and the Uttara Bhagas and the length of each Bhava in the Standard Horoscope.

Appyng the above rules we get the following results :—

	Poorva Bhaga of the Bhava	Uttara Bhaga of the Bhava	Length of the Bhava
I	13° 38' 30"	16° 21' 30"	30° 0' 0"
II	16 21 30	16 21 30	32 43 0
III	16 21 30	16 21 30	32 43 0
IV	16 21 30	13 38 30	30 0 0
V	13 38 30	13 38 30	27 17 0
VI	13 38 30	13 38 30	27 17 0
VII	13 38 30	16 21 30	30 0 0
VIII	16 21 30	16 21 30	32 43 0
IX	16 21 30	16 21 30	32 43 0
X	16 21 30	13 38 30	30 0 0
XI	13 38 30	10 38 30	27 17 0
XII	13 38 30	13 38 30	27 17 0

CHAPTER XI

Casting the Horoscope according to the Western Method and Its Reduction to the Hindu

93. **General Observations.**—Hitherto we have exhaustively treated the processes involved in the act of casting a horoscope according to the Hindu method. Realising the fact that to a number of people who are anxious to apply the Hindu method of astrology, authentic Hindu almanacs will not be either accessible or intelligible, we have thought it fit to include a chapter dealing with the method of computing the longitudes of planets, etc., according to modern methods and their reduction to the Hindu.

In view of the fact that ancient Hindu values of durations of the signs, etc., require correction in the light of observations, one has to rely, for purposes of accuracy, on the astronomical constants obtained on the basis of modern trigonometrical methods. Hence, in preference to the methods chalked out in Chapters IX and X, the method of casting horoscopes as per principles given in this chapter may be adopted for greater accuracy. In the standard horoscope, planetary positions and the longitudes of the ascendant and Midheaven, as illustrated in the previous chapter, have been obtained on the basis explained in this chapter.

94. Hindu and Western Methods.—The Hindu method of casting a horoscope is always Sayana though finally it is reduced to the Nirayana for predictive purposes, so that, we want Nirayana Longitudes of planets and Bhavas, for analysing a horoscope according to the rules given in books dealing with the *Phalit Bhaga* (judicial portion) of astrology.

The westerners base their calculations as well as predictions on the shifting zodiac, i.e., the longitudes of planets, etc., given by them correspond to those of Sayana amongst us, so that by subtracting the Ayanamsa from such positions, the Nirayana Longitudes can be obtained.

95. The Modern Ephemeris.—In order to cast a horoscope according to the western method, a reliable ephemeris must be secured. An ephemeris will contain such information as the longitudes of planets, their latitudes and declinations and the Sidereal Time marked out for each day and calculated to Greenwich Mean Noon. In some, the Equation of Time referred to in the preceding chapters will also be given in addition to the daily motions of planets. A modern ephemeris roughly corresponds to a Hindu almanac with the difference that while the former is exclusively Sayana, among the latter, some are Sayana

and besides, a Hindu *Panchanga* contains much more useful information like *thithi*, *yoga*, *karana*, etc., whose importance, it is out of place to make mention of here, than an ephemeris.

96. Table of House.—These are absolutely necessary for ascertaining the ascendant and other Houses knowing beforehand, the Sidereal Time at the birth moment. The latitude of the birthplace must be sought for in a “Table of Houses” and then the ascendant, etc., traced for the Sidereal Time. The cusps of the Houses of the western system correspond to the Sayana Bhava Madhyas of the Hindus and by the subtraction of the Ayanamsa, their Nirayana Bhava Madhyas can be obtained.

Cusp of the Western House—Ayanamsa=Nirayana Bhava Madhya of the Hindus.

97. Local Mean Time of Birth.—If the birth moment is marked in Standard Time convert it into Local Mean Time (L.M.T.) (See Article 65).

98. Greenwich Mean Time of Birth.—As the Sayana longitudes of planets are given for Greenwich Mean Time (G.M.T.) generally for Greenwich Mean Noon (G.M.T.), the L.M.T. of birth must be converted into the corresponding G.M.T. of birth thus :

$$\text{G.M.T.} = \text{L.M.T.} + \frac{\text{Longitude of place}}{15^\circ}$$

— if place is East of Greenwich.
+ if place is West of Greenwich.

Example. 29.—Birth on 16-10-1918 at 2-6-16 p.m. (L.M.T.)

Lat. 13° N., Long. 77° 34' E. Find the G.M.T. of birth.

77° 34'

G.M.T. = 2-6-16 p.m. — 15

~~2-6-16 p.m.-5-10-16=8-56-0 a.m.~~

\therefore G.M.T. of Birth = 8-56 a.m.

99. Greenwich Mean Time Interval of Birth.

—As already observed above, the longitudes of planets will be given for Greenwich Mean Noon (sometimes for midnight also). In order to find out their positions at the moment of birth, we should ascertain the elapsed time, rather the interval between the G.M.N. and the G.M.T. If the G.M.T. of the birth falls after the noon (*i.e.*, G.M.N.) then take the interval between the two: if the G.M.T. of birth is before the noon, then take the interval between the preceding noon and G.M.T. of birth. The result is Greenwich Mean Time interval of birth.

Example 30.—Find the G.M.T. interval of birth in the Standard Horoscope.

The G.M.T. of Birth = 8-56 a.m.

∴ Take preceding noon (noon of 15-10-1918)

∴ G.M.T. interval of birth is 20h. 56m.

100. Daily Motions of Planets.—The celestial arc traversed by the planets in a day is their daily

motion. Take the arc that each planet has traversed from the noon preceding birth to the noon succeeding birth.

Example 31.—Find the daily motions of planets in the Standard Horoscope.

Referring to German Ephemeris for 1918, we get the following information :—

Planets	Long. on 16th Oct. at	Long. on 15th Oct. at	Daily Mo-
	Noon	Noon	Planets
Sun (Libra)	22° 18' 55"	21° 19' 25"	0° 59' 30"
Moon (Pisces)	4° 24' 0"	20° 5' 0"	14° 19' 0"
Mars (Sagittarius)	10° 50' 0"	10° 7' 0"	0° 43' 0"
Mercury (Libra)	23° 1' 0"	21° 19' 0"	1° 42' 0"
Jupiter (Cancer)	15° 18' 0"	15° 14' 0"	0° 4' 0"
Venus (Libra)	12° 36' 0"	11° 21' 0"	1° 15' 0"
Saturn (Leo)	25° 40' 0"	25° 35' 0"	0° 5' 0"
Rahu, Moon's ascend-			
ing node (Sagit.)	15° 46' 0"	15° 43' 0"	0° 3' 0"

101. Hindu Nirayana Longitudes of Planets.—We know the daily movements of all the planets, i.e., the arc they pass through in 24 hours. Now find by proportion or with the aid of Logarithmic tables, the arc covered by each of them in the G.M.T. interval of birth and add this to their respective longitudes at the noon previous to birth. The result would represent their exact Sayana positions at the birth moment. If a planet is in

retrograde, instead of adding the arc traversed in a day, to its previous longitude, the arc must be subtracted from it. In case of Rahu, the arc must always be subtracted. In the case of the Sun and the Moon the arc must be always added. In the case of the other five planets the arc is additive or subtractive according as the planet is direct or retrograde. From the Sayana Longitudes so obtained, subtract Ayanamsa for the year of birth (see Art. 50) and the Hindu Nirayana Longitudes of the planets are obtained.

Rule 1.—Arc traversed in G.M.T. interval of birth

$$= \frac{\text{Daily motion of the planet}}{24 \text{ hours}} \times \text{G.M.T. interval of birth.}$$

Rule 2.—Sayana Long. at birth=

- (a) Long. of planet at noon previous to birth \pm arc traversed in G.M.T. interval of birth.
+ in case of Sun, Moon and other planets having direct motion, except Rahu.
— in case of Retrograde planets and Rahu.

(b) Rahu's Long. $+ 180^\circ$ = Kethu's Long.

Rule 3.—Hindu Nirayana Long. = Sayana Long.—Ayanamsa.

Example 32.—Find the Hindu Nirayana Longitudes of planets in the Standard Horoscope.

G.M.T. interval of birth = 20h. 56m.

	\therefore arc traversed by each planet in 20h. 56m. +
Sun	$59' 30'' \times 20h. 56m.$ <hr/> 24 $= 0^\circ 51' 53''$
Mars	$0^\circ 43' \times 20h. 56m.$ <hr/> 24 $= 0^\circ 40' 15''$
Mercury	$1^\circ 42' \times 20h. 56m$ <hr/> 24 $= 1^\circ 29' 15''$
Jupiter	$0^\circ 4' \times 20h. 56m.$ <hr/> 24 $= 0^\circ 3' 30''$
Venus	$1^\circ 15' \times 20h. 56m.$ <hr/> 24 $= 1^\circ 5' 37''$
Saturn	$0^\circ 5^\circ \times 20h. 56m.$ <hr/> 24 $= 0^\circ 4' 22''$
Rahu	$0^\circ 3' \times 20h. 56m.$ <hr/> 24 $= 0^\circ 2' 32''$

It is better to ascertain the arc traversed by the Moon by recourse to Logarithmic tables given at the end of the Ephemeris. If the reader cannot do this he can simply find the arc, as usual, by the rule of three,

Moon's daily motion	=	14 19'
G.M.T. interval of birth	=	20h. 56m.
\therefore Log. 14° 19'	=	0. 2244
\therefore Log. 20h. 56m.	=	0. 0594

By adding 0 2838

$$\therefore \text{Anti Log. of } 0.2838 = 12^\circ 29'$$

$$\therefore \text{Moon's motion in } 20h. 56m. = 12^\circ 29'.$$

Applying Rule 2 (*a* and *b*) we get their Sayana Longitudes thus:—

Planets	Long.		Arc. covered in 20h. 56m.	Sayana Long. at Birth
	on 15th Oct.	on		
1. Sun	201° 19' 25"	+ 0° 51' 11"	= 202° 10' 36"
2. Moon	320 5 0	+ 12 29 0	= 332 34 0
3. Mars	250 7 0	+ 0 40 15	= 250 47 15
4. Mercury	201 19 0	+ 1 29 15	= 202 48 15
5. Jupiter	105 14 0	+ 0 3 30	= 105 17 30
6. Venus	191 21 0	+ 1 5 37	= 192 26 37
7. Saturn	145 35 0	+ 0 4 22	= 145 39 22
8. Rahu	255 43 0	- 0 2 32	= 255 40 28
9. Kethu	= 75 40 28

Applying Rule 3 :—

Planets	Sayana Long.		Ayanamsa	Its Nirayana Long.
	of planet	at birth		
1. Sun	202° 10' 36"	- 21° 16' 41"	= 180° 53' 55"
2. Moon	332 34 0	- 21 16 41	= 311 17 19
3. Mars	250 47 15	- 21 16 47	= 229 30 34
4. Mercury	202 48 15	- 21 16 47	= 181 31 34
5. Jupiter	105 17 30	- 21 16 41	= 84 0 49
6. Venus	192 26 37	- 21 16 41	= 171 9 56
7. Saturn	145 39 22	- 22 16 41	= 124 22 41
8. Rahu	255 40 28	- 21 16 41	= 234 23 47
9. Kethu	75 40 28	- 21 16 41	= 54 23 47

Now we have obtained the positions of grahas; we shall proceed to find out the different Bhavas.

102. The Sidereal Time of Birth—This is very essential for finding out the ascendant and other houses. You will see the Sidereal Time marked for G.M.N. everyday in the first column of the Ephemeris, *i.e.*, next to weekday column. The Sidereal Time for birth must be obtained as follows :—

First ascertain the Sidereal Time at the previous Greenwich Mean Noon. From or to this deduct or add at the rate of 10 seconds for every one hour of longitude, this being the correction for the difference of time between place of birth and Greenwich. Deduct if the place of birth is East of Greenwich, add if it is west of Greenwich. The Sidereal Time for the previous Local Mean Noon is obtained. Now add to this Mean Time interval (*i.e.*, the number of hours passed from previous local noon to birth) and also add 10 seconds per hour since noon, as this represents the difference between the Sidereal Time and the Mean Time. Expunge multiples of 24 hours. The result represents the Sidereal Time at birth.

Example 33.—Find the Sidereal Time at Birth in the Standard Horoscope.

L.M.T. of Birth	=	2h 6m 16s (P.M.)
Long. of Birth 77° 34' E	=	5h. 10m. 16s.
		H. M. S.
Sidereal Time at G.M.N. of 16th Oct.	=	13 36 46
Less Correction for the difference of time between the place of birth (East of Greenwich) and Greenwich	=	..... - 0 0 52

∴ Sidereal Time at Local Noon	=	.... 13 35 54
Add Number of hours passed from noon to birth (<i>i.e.</i> , Mean Time interval)	=	2 6 16
Add Correction between Sidereal Time and Mean Time at 10s. per hour	=	.... 0 0 21

∴ Sidereal Time at Birth	=	.... 15 42 31

130. R.A.M.C. at Birth.—Convert Sidereal Time into arc. The result represents the R.A.M.C. at birth, *i.e.*, Sidereal Time $\times 15^\circ$ = R.A.M.C. at birth.

Example 34.—Find the R.A.M.C. for the given Sidereal Time at birth as 15h 42m. 31s. in the Standard Horoscope.

15h.	=	225° 0' 0"
42m.	=	10° 30' 0"
31s.	=	0° 8' 0"

∴ R.A.M.C. at birth	=	235° 38' 0"

104. Sayana Longitudes of Angular Houses.— Since there is a slight difference between the Hindu and western methods of computing the longitudes of the non-angular houses, we shall ascertain those of the angular houses from the Modern Table of Houses, reduce them into Nirayana ones and then find out the longitudes of the non-angular houses according to the rules described in Article 88.

Consider the “Table of Houses” for the latitude of the birthplace; if no Table of Houses for the birthplace is available, then refer to that which is nearest to the latitude of birth. Find the nearest time corresponding to Local Sidereal Time of Birth (under the column Sidereal Time). Next to that we see the cusp of the tenth house; mark its longitude; trace further and you will see a column marked as “Ascendant”; mark its longitude also. Deduct from these two, the Ayanamsa. Their Nirayana Bhava Madhyas are obtained, i.e., the longitudes of Udaya Lagna (Ascendant) and the Upper Meridian (Madhya Lagna) are obtained. Adding 180° to each of these two, the Nirayana Asta Lagna (Western Horizon) and the Pathala Lagna (Lower Meridian) are obtained. Now apply the

rules contained in Articles 87, 88, 89, 90 and 91. You have got the horoscope ready.

Example 35.—Find the Sayana Longitudes of the cusps of the ascendant and the 10th house in the Standard Horoscope and reduce them to those of Nirayana.

Sidereal Time at Birth = 15h. 42m. 30s.

Birthplace, 13° North Latitude.

∴ The Table of Houses for the birth latitude, must be consulted.

15h. 42m. 30s. is the Sidereal Time of birth.

∴ Sayana Long. of cusp of ascdt. = 19° 43' 41" Aquarius

∴ Sayana Long. of cusp of tenth house = 27° 52' 41" Scorpio
or 237° 52' 41"

Sayana Long. of the cusp. of the house	Ayanamsa	Nirayana Long. of Bhava Madhya
Ascdt. 319° 43' 41" —	21° 16' 41"	= 298° 27'
10th House : 237° 52' 41" — 21° 16' 41'	=	216° 36'
∴ Asta Lagna (W. Horizon) = 298° — 27' + 180° = 118° 27'		
Pathala Lagna (Lower Meridian) = 216° — 36' + 180°		= 36° 36'.

Applying the rules described in Articles 87, 88, 89, 91 and 96, the Longitudes of Bhava Madhyas of the Non-angular Houses, Bhava-Sandhis, Poorya and Uttara Bhagas of the Bhavas and the length of each Bhava can be determined. For these details refer to examples 27 and 28 of Chap. X (Pp. 110 and 111).

105. Nirayana Tables.—The need for deducting Ayanamsa and calculating the longitudes of the houses by first determining the rising sign

(Udaya Lagna) and the tenth house (Madhya Lagna) can be dispensed with by the use of *The Nirayana Tables of Houses*. The sphutas (longitudes) for the ascendant and the 10th, 11th and 12th houses are given and the sphutas for other houses can be easily obtained by simple calculations. These Tables have this additional advantage, viz., that they are calculated for the Ayanamsa adopted by the author, and cover all places between the equator and 60° Lat.

		Kethu	Jupiter			Kethu	Jupiter
Moon	RASI				BHAVA		Saturn
Ascdt.	KUNDALY	Saturn		Ascdt.	KUNDALY		
	Mars Rahu	Sun Merc.	Venus		Mars Rahu		Venus Sun Merc.

CHAPTER XII

The Shodasavargas

106. **The Vargas**—The Zodiac or the Bhachakra is composed of 360 degrees of the celestial space. 30 degrees constitute one sign of the zodiac. Each of such signs is further subdivided into a number of other divisions, *i.e.*, into certain kinds of divisions. These kinds of divisions are known as the Vargas. These are based on the assumption that planets get increase or decrease in their capacity to produce good or inflict bad, in a horoscope, according to their particular positions within a sign. They become highly potent by occupying certain kinds of divisions, owned by them, or by planets declared as their intimate friends, or by such divisions being their own places of exaltation or fall. These various relations like elevation (*Uchcha*), fall (*Neecha*), etc., have been already discussed elsewhere*.

107. **The Varga Divisions.**—They are really sixteen in number. But the number adopted by the different astrologers varies according to how they are used. For instance, for finding out the *Sthanabala* (positional strength) of a

* For further information see my book *Graha and Bhava Balas*.

planet, the Saptavargas are considered. For making predictions, the Shadvargas are employed. Some consider: Dasavargas and so on, the choice often depending upon the prevailing custom. We shall, for purposes of determining the Sthanabala of planets, go in detail into Saptavargas and scan through all the sixteen vargas rather superficially.

108. The Shadvargas.—They are (1) Rasi, (2) Hora, (3) Drekkana, (4) Navamsa, (5) Dwadasamsa, and (6) Thrimisamsa.

109. The Saptavargas.—(1) Rasi, (2) Hora, (3) Drekkana, (4) Sapthamsa, (5) Navamsa, (6) Dwadasamsa, and (7) Thrimisamsa.

110. The Dasavargas.—(1) Rasi, (2) Hora, (3) Drekkana, (4) Sapthamsa, (5) Navamsa, (6) Dasamsa, (7) Dwadasamsa, (8) Shodasamsa, (9) Thrimisamsa, and (10) Shashtyamsa.

111. The Shodasa Vargas.—(1) Rasi, (2) Hora, (3) Drekkana, (4) Chaturthamsa, (5) Sapthamsa, (6) Navamsa, (7) Dasamsa, (8) Dwadasamsa, (9) Shodasamsa, (10) Vimsamsa, (11) Chathurvimsamsa, (12) Bhamsa, (13) Thrimisamsa, (14) Kharedamsa, (15) Aksha Vedamsa, and (16) Shashtyamsa.

We shall now describe the various vargas, and the methods of locating the planets in each one of them.

112. **Rasi.**—Rasi means sign. The 12 signs of the zodiac are the 12 rasis. The limits and the lordships of the various rasis are named in the second chapter. The Rasivarga is employed for predicting events pertaining to the body.

Example 36.—*Find the Rasis of the different planets and the Lagna in the Standard Horoscope and the lords of such Rasis.*

Planet	Its Long.	Rasi	Lord of the Rasi
Ravi	180° 53' 55"	Thula	Sukra
Chandra	311 17 19	Kumbha	Sani
Kuja	229 30 34	Vrischika	Kuja
Budha	181 31 34	Thula	Sukra
Guru	84 0 49	Mithuna	Budha
Sukra	171 9 56	Kanya	Budha
Sani	124 22 41	Simha	Ravi
Rahu	234 23 47	Vrischika	Kuja
Kethu	54 23 47	Vrishabha	Sukra
Lagna	298 27 0	Makara	Sani

113. **Hora.**— $2\frac{1}{2}$ ghatis constitute 1 hora; 15 degrees are equal to one hour in time so that, on the whole, there are 24 hours of 15° each in the entire zodiac. Each sign contains 2 horas, namely, the Surya Hora (Sun's) and the Chandra Hora (Moon's). In Oja Rasis or odd signs the first hora is governed by the Sun and the second

by the Moon. In Yugma Rasis or even signs the ruler of the first hora is the Moon, and second hora is governed by the Sun. Odd signs are Mesha, Mithuna, Simha, etc. Even signs are Vrishabha, Kataka, Kanya, etc. For instance, the first hora in Mesha is governed by the Sun, while the second is presided over by the Moon. Similarly so with reference to Mithuna, etc. In Vrishabha, Chandra presides over the first hora and the Sun over the next. The 'Hora' chart is employed for studying wealth.

Example 37.—Find the Horas occupied by the planets, and the lords of such Horas in the Standard Horoscope.

Planet		Its Long.		Nature of Hora	Its Lord
				Rasi	
Ravi	180° 53" 55"	Oja	Surya	Surya	
Chandra	311 17 19	Oja	Surya	Surya	
Kuja	229 30 34	Yugma	Surya	Surya	
Budha	181 31 34	Oja	Surya	Surya	
Guru	84 0 49 ^b	Oja	Chandra	Chandra	
Sukra	171 9 56	Yugma	Surya	Surya	
Sani	124 22 41	Oia	Surya	Surya	
Lagna	298 27 0	Yugma	Surya	Surya	

We shall omit Rahu and Kethu for the present, as they are considered Aprakashaka Grahas or shadowy planets and as they simply reflect the results of the lords of the houses which they occupy.

114. Drekkana.—The zodiac is divided into 36 drekkanas so that each gets 10°. The lord of the first drekkana in a rasi is the lord of the rasi itself; that of the second, the lord of 5th from it; that of the 3rd, the lord of the 9th from it.

Rasi	Lord of its 1st Drekkana	Lord of its 2nd Drekkana	Lord of its 3rd Drekkana
Mesha	Kuja	Ravi	Guru
Vrishabha	Sukra	Budha	Sani
Mithuna	Budha	Sukra	Sani
Kataka	Chandra	Kuja	Guru
Simha	Ravi	Guru	Kuja
Kanya	Budha	Sani	Sukra
Thula	Sukra	Sani	Budha
Vrischika	Kuja	Guru	Chandra
Dhanus	Guru	Kuja	Ravi
Makara	Sani	Sukra	Budha
Kumbha	Sani	Budha	Sukra
Meena	Guru	Chandra	Kuja

Example 38.—Find the various Drekkanas occupied by the planets and the lords of such Drekkanas in the Standard Horoscope.

Planet	Its Long.	No. of Drekkana			Its Lord
Ravi	180° 53' 55"	1st	in Thula		Sukra
Chandra	311 17 19	2nd	in Kumbha		Budha
Kuja	229 30 34	2nd	in Vrischika		Guru
Budha	181 31 34	1st	in Thula		Sukra
Guru	84 0 49	3rd	in Mithuna		Sani
Sukra	171 9 56	3rd	in Kanya		Sukra
Sani	124 22 41	1st	in Simha		Ravi
Lagna	298 27 0	3rd	in Makara		Budha

115. Chaturthamsa.—When a sign is divided into four equal parts, each one is called a Chaturthamsa. The zodiac contains 48 Chaturthamsas and each is equal to $\frac{360}{48}$ or $7^{\circ} 30''$ of the celestial space.

The lord of the 1st Chaturthamsa is the lord of the rasi itself; that of the 2nd, the lord of the 4th from it; that of the 3rd, the lord of the 7th and that of the 4th, the lord of the 10th. Thus the lord of each Kendra Rasi (quadrant) will become the lord of each Chaturthamsa.

Example 39.—Find the Chaturthamsa the planets and the Lagna have occupied and the lords of such Chaturthamsas in the Standard Horoscope.

Planet		Its Long.		No. of the Chaturthamsa	Lord of Chaturthamsa
Ravi	....	180° 53'	55"	1st	— Sukra
Chandra	....	311 17	19	2nd	— ,
Kuja	....	229 30	34	3rd	— ,
Budha	....	181 31	34	1st	— ,
Guru	....	84 0	49	4th	— Guru
Sukra	....	171 9	56	3rd	— Guru
Sani	....	124 22	41	1st	— Ravi
Lagna	....	298 27	0	4th	— Sukra

116. Sapthamsa.—When a sign is divided into seven equal divisions, each is called a Sapthamsa and gets $\frac{30}{7} = 4^{\circ} 17' 8\frac{4}{7}''$. The

Bhachakra is divided into 84 Sapthamsas. In odd signs they are governed by the lords of the first seven rasis and in even signs by the lords of the seventh and following signs.

Example 40.—Find the Sapthamsa the planets and the Lagna have occupied, and the lords of such Sapthamsas in the Standard Horoscope.

Planet		Its Long.		Odd or Even Rasi	No. of the Sapthamsa	Lord of Sapthamsa	
Ravi	180°	53'	55"	Odd	1st	Sukra
Chandra	311	17	19	Odd	3rd	Kuja
Kuja	229	30	34	Even	5th	Budha
Budha	181	31	34	Odd	1st	Sukra
Guru	84	0	49	Odd	6th	Kuja
Sukra	171	9	56	Even	5th	Chandra
Sani	124	22	41	Odd	2nd	Budha
Lagna	298	27	0	Even	7th	Sani

117. Navamsa.—This is the most important subdivision among the Hindus. The successful forecasts made by them have this system as the basis. This has been formulated in view of the relationship between the degrees of the ecliptic and the stellar points or nakshatras. The nakshatras are 27 in number (Art. 10). Therefore each nakshatra gets $13\frac{1}{3}$ degrees. Each nakshatra is further subdivided into padas or quarters, so that one pada is equal to $\frac{13\frac{1}{3}}{4} = 3\frac{1}{3}^{\circ}$ of the ecliptic

arc. Similarly a sign is divided into nine equal

parts and each is a navamsa. The Bhachakra is divided into 108 navamsas and each navamsa corresponds to a *Nakshatra Pada*. Reference to the schedule of nakshatras given in Art. 10 will tell you that 4 quarters of Aswini, 4 of Bharani, and one of Krittika make up Mesha. By knowing the Nakshatra padas of Grahas we can readily locate them in their precise Navamsa Vargas.

Take Mesha and divide it into nine equal parts. The first part (Navamsa) is governed by the lord of Mesha, viz., Kuja ; the second by the lord of the second, viz., Sukra ; the third by Budha the lord of the third; the fourth by the lord of the fourth, viz., Chandra, and so on till the last or the ninth navamsa which is governed by Jupiter, lord of the ninth from Mesha. Now divide Vrishabha into nine equal parts. We have left counting of the navamsa at Dhanus, viz., the ninth from Mesha. Therefore, the first navamsa of Taurus (or the 10th navamsa from Mesha) is governed by the lord of the 10th from Mesha, viz., lord of Makara—Sani ; the 2nd navamsa (in Vrishabha), by the lord of the 11th from Mesha, viz., Sani ; the 3rd by the lord of the 12th, viz., Guru ; the 4th, 5th, 6th, 7th, 8th and 9th by Kuja, Sukra, Budha, Chandra, Ravi and Budha respectively. Then the first navamsa of Mithuna

is ruled by the lord of the 7th from Aries, viz., Sukra. The last navamsa of Gemini is governed by the lord of the ninth from Libra, viz., Mercury. Again the first of Cancer is governed by the lord of Cancer and the last navamsa of Cancer by the lord of ninth from Cancer, viz., Jupiter, so that, the first navamsa in Leo is ruled by the lord of tenth from Cancer—Aries, viz., Mars. It invariably follows, that for Mesha, Simha and Dhanus navamsas must be counted from Mesha to Dhanus; for Vrishabha, Kanya and Makara from Makara; for Mithuna, Thula and Kumbha from Thula; and for Kataka, Vrischika and Meena from Kataka. Thus we see four distinct groups given below :

- (a) Mesha, Simha, Dhanus —from Mesha.
- (b) Vrishabha, Kanya, Makara —from Makara.
- (c) Mithuna, Thula, Kumbha —from Thula.
- (d) Kataka, Vrischika, Meena —from Kataka.

Take for instance a planet whose longitude is $114^{\circ} 26' 15''$ or $24^{\circ} 26' 15''$ in Cancer. Note this belongs to group (d) so that the navamsas must be counted from Kataka. $24^{\circ} 26' 15'' \div 3\frac{1}{2} = 7$ and odd navamsas. The planet has passed 7 navamsas in Cancer and is in the 8th. The 8th navamsa in Cancer is ruled by the lord of the 8th rasi from Cancer, viz., Aquarius—Saturn. Thus the planet is in Saturn's navamsa.

In group (a) the lords of the nine navamsas will be the lords of Mesha and the succeeding signs. Similarly with reference to other groups, the navamsas must be considered.

Example 41.—Find the Navamsa occupied by the planets and the Lagna, and the lords of such Navamsas in the Standard Horoscope.*

Planet		Its Long.	No. of the Navamsa	Its Lord
Ravi	....	180° 53' 55"	1st in Thula	Sukra
Chandra	....	311 17 19	4th in Kumbha	Sani
Kuja	....	229 30 34	6th in Vrischika	Guru
Budha	....	181 31 34	1st in Thula	Sukra
Guru	....	84 0 49	8th in Mithuna	Sukra
Sukra	....	171 9 56	7th in Kanya	Chandra
Sani	....	124 22 41	2nd in Simha	Sukra
Lagna	....	298 27 0	9th in Makara	Budha
Rahu	....	234 23 47	8th in Vrischika	Sani
Kethu	....	54 23 47	8th in Vrishabha	Ravi

118. Navamsas and Nakshatra Padas.—Now that we have learnt, how to find, in which navamsa a planet is situated, we can also readily find out the particular constellation and the particular pada the planet is in. For instance, take the Sun. He occupies the 1st navamsa in Thula, i.e., he is in the 1st pada of Thula rasi. The schedule of constellations in Chapter II will

*Include Rahu and Kethu also.

tell you that the last two padas of Chitta, four padas of Swathi and the three padas of Visakha make up Thula. See to which pada (quarter) and nakshatra (constellation) in Thula, the 1st navamsa corresponds.

Thula	Chitta	2	Padas
	Swathi	4	„
	Visakha	3	„

Therefore, the 1st navamsa of Thula corresponds to the third of Chitta. Therefore you say that the Sun is in the third pada (quarter) of the nakshatra (constellation) Chitta. Ascertain for all the planets, the nakshatras and the padas corresponding to the navamsa positions.

Example 42.—Find the Nakshatra Pada occupied by the different planets and the Lagna (of course Bhava Madhya) in the Standard Horoscope.

Planet	Rasi	Navamsa	No. of Nakshatra	Pada
Ravi	.... Thula	1st	Chitta	3
Chandra	.... Kumbha	4th	Satabhisha	2
Kuja	.... Vrischika	6th	Jyeshts	1
Budha	.... Thula	1st	Chitta	3
Guru	.... Mithuna	8th	Punarvasu	2
Sukra	.... Kanya	7th	Hasta	4
Sani	.... Simha	2nd	Makha	2
Lagna	.... Makara	9th	Dhanishta	2
Rahu	.... Vrischika	8th	Jyeshta	3
Kethu	.... Vrishabha	8th	Mrigasira	1

119. **Navamsa Chakra.**—As navamsa combinations are too often referred to in *Hindu Predictive Astrology* it would be better to mark the Grahas in a navamsa diagram for purposes of convenience and reference.

Example 43.—Locate the planets and Lagna of the Standard Horoscope in a Navamsa Kundali.

★	☽	♂ Guru Sani	★★
☿ Rahu	NAVAMSA DIAGRAM		♃ Sukra
☽ Chandra			♄ Ketu
♀ Kuja	☿	♂ Ravi Budha	☿ Lagna

120. **The Dasamsa.**—When a sign is divided into ten equal parts, each is called a Dasamsa, meaning $\frac{1}{10}$ th of it. The whole Zodiac gets 120 Dasamsas of 3° each.

In odd signs the lords of the Dasamsas commence from the owner of the sign itself, while in even signs the rulers are the lords of the ninth* and the following house respectively.

* See *Sarvartha Chintamani*, English translation by Prof. B. Suryanarain Rao, Stanza 21, Chapter I.

Example 44.—Find the Dasamsa the planets and the Lagna have occupied and the lords of such Dasamsa in the Standard Horoscope.

Planet	Its Long.	No. of Dasamsa	Lord of Dasamsa
Ravi	180° 53' 55"	1st	Sukra
Chandra	311 17 19	4th	Sukra
Kuja	229 30 34	7th	Sani
Budha	181 31 34	1st	Sukra
Guru	84 0 49	9th	Sani
Sukra	171 9 56	8th	Guru
Sani	124 22 41	2nd	Budha
Lagna	298 27 0	10th	Budha

121. Dwadasamsa.—When a sign is divided into 12 equal parts, each is called a Dwadasamsa and measures $2\frac{1}{2}^{\circ}$. The Bhachakra can thus be said to contain $12 \times 12 = 114$ Dwadasamsas. The lords of the Dwadasamsas in a sign are lords of the 12 signs from it, i.e., the lord of the first Dwadasamsa in Mesha is Kuja, that of the second Sukra and so on.

Example 45.—Find the Dwadasamsa occupied by the various planets and the Lagna in the Standard Horoscope and the lords of such Dwadasamsas.

Planet	Its Long.	No. of Dwadasamsa	Lord of Dwadasamsa
Ravi	.... 180° 53' 55"	1st in Thula	Sukra
Chandra	.... 311 17 19	5th in Kumbha	Budha
Kuja	.... 229 30 34	8th in Vrischika	Budha
Budha	.... 181 31 34	1st in Thula	Sukra
Guru	.... 84 0 49	10th in Mithuna	Guru
Sukra	.... 171 9 56	9th in Kanya	Sukra
Sani	.... 124 22 41	2nd in Simha	Budha
Lagna	.... 298 27 0	12th in Makara	Guru

122. **Shodasamsa.**—When a sign is divided into 16 equal parts, each is called a Shodasamsa. The Bhachakra contains $16 \times 12 = 192$ Shodasamsas. The lords of the sixteen Shodasamsas in movable, fixed and common signs are the lords of the signs counted from Aries, Leo and Sagittarius respectively. Thus in Aries (a movable sign) the sixteen lords are Mars, Venus, Mercury, Moon, Sun, Mercury, Venus, Mars, Jupiter, Saturn, Saturn, Jupiter, Mars, Venus, Mercury and Moon. Take for example Aquarius. It is a fixed sign. The count starts from Leo and the lords of the 16 Shodasamsas will respectively be Sun, Mercury, Venus, Mars, Jupiter, Saturn, Saturn, Jupiter, Mars, Venus, Mercury, Moon, Sun, Mercury, Venus; and Mars.

The counting is always clockwise.

Example 46.—Find the Shodasamsa occupied by the various planets and the Lagna in the Standard Horoscope and the lord of such Shodasamsa.

Planet	Its Long.				No. of Shodasamsa	Lord of Shodasamsa
Ravi	180°	53'	55"		1st	Kuja
Chandra	311	17	19		7th	Sani
Kuja	229	30	34		11th	Budha
Budha	181	31	34		1st	Kuja
Guru	84	0	49		13th	Guru
Sukra	171	9	56		12th	Kuja
Sani	124	22	41		3rd	Sukra
Lagna	298	27	0		16th	Chandra

123. Vimsamsa.—When a sign is divided into twenty parts, each is called a Vimsamsa, the length of the arc being $1^{\circ} 30'$. The twenty Vimsamsas in a movable, fixed and common signs are ruled by the lords of signs counted from Aries, Sagittarius and Leo respectively. Thus in Aries (which is movable) the lords of the Vimsamsas are Mars, Venus, Mercury, Moon, Sun, Mercury, Venus, Mars, Jupiter, Saturn, Saturn, Jupiter, Mars, Venus, Mercury, Moon, Sun, Mercury, Venus, and Mars. In Taurus for instance, the ruler of the first Vimsamsa is Jupiter, lord of Sagittarius and the other lords follow in regular order. In Gemini, the lord of the first Vimsamsa is the Sun, lord of Leo and the other parts are governed by Mercury, Venus, etc., counted clockwise.

Example 47.—Find the Vimsamsa occupied by various planets and the Lagna in the Standard Horoscope and the lord of such Vimsamsas.

Planets	Its Long.	No. of Vimsamsa	Lord of Vimsamsa
Ravi	.... $180^{\circ} 53' 55''$	1st	Kuja
Chandra	.... 311 17 19	8th	Chandra
Kuja	.... 229 30 34	14th	Sani
Budha	.... 181 31 34	2nd	Sukra
Guru	.... 84 0 49	17th	Guru
Sukra	.... 171 9 56	15th	Sukra
Sani	.... 124 22 41	3rd	Sani
Lagna	.... 298 27 0	19th	Sukra.

124. **Chaturvimsamsa.**—Each one-twenty-fourth part of a sign goes under the name of *Chaturvimsamsa*. There are $24 \times 12 = 288$ Vimsas in the zodiac. In odd signs, the lord of the first division is the Sun. Lords of subsequent divisions follow in order. In even signs, the lord of the 1st part is the Moon and the 2nd, 3rd, etc., lordships go to the Sun, Mercury, Venus, etc., in regular order. The count is always clockwise.

Example 48.—*Find the Chaturvimsamsa occupied by the various planets and the Lagna in the Standard Horoscope and the lord of such Chaturvimsamsa.*

Planet		Its Long.			No. of Chatur- vimsamsa	Lord of Chatur- vimsamsa
Ravi	....	180°	53'	55"	1st	Ravi
Chandra	....	311	17	19	10th	Sukra
Kuja	....	229	30	34	16th	Sukra
Budha	....	181	31	34	2nd	Budha
Guru	....	84	0	49	20th	Guru
Sukra	....	171	9	56	17th	Kuja
Sani	....	124	22	41	4th	Kuja
Lagna	....	298	27	0	23rd	Sukra

125. **Bhamsa.**—When a sign is divided into 27 parts, each part is called a Bhamsa. Thus there are in the entire zodiac $27 \times 12 = 324$ Bhamsas. (a) In Aries, Leo and Sagittarius, the 27 parts are governed by the lords of the signs

counted in regular order from Aries. (b) In Taurus, Virgo and Capricorn, the rulership begins from Cancer. (c) In Gemini, Libra and Aquarius, the counting starts from Libra. (d) In Cancer, Scorpio and Pisces, the Bhamsas are governed by the lords of signs reckoned from Capricorn. For example take Virgo. It falls in group (b). Therefore the count must start from Cancer. The lord of the 1st Bhamsa in Virgo is the lord of Cancer, viz., Moon. The other lords will be the Sun, Mercury, Venus, Mars, Jupiter, Saturn; Saturn, Jupiter, Mars, Venus, Mercury, Moon, Sun, Mercury, Venus, Mars, Jupiter, Saturn, Saturn, Jupiter, Mars, Venus, Mercury, Moon, Sun and Mercury respectively.

Example 49.—Find the Bhamsa occupied by the various planets and the Lagna in the Standard Horoscope and the lord of such Bhamsas.

Planet	Its Long.	No. of Bhamsa	Lord of Bhamsa
Ravi	180° 53' 55"	1st	Sukra
Chandra	311 17 19	11th	Ravi
Kuja	229 30 34	18th	Budha
Budha	181 31 34	2nd	Kuja
Guru	84 0 49	23rd	Ravi
Sukra	171 9 56	20th	Sani
Sani	124 22 41	4th	Chandra
Lagna	298 27 0	26th	Ravi

126. **Thrimssamsa.**—When a sign is divided into 30 equal parts, each is called a Thrimssama measuring 1° each. In odd signs, the Thrimssamsas are governed thus:—

Mars	Saturn	Jupiter	Mercury	Venus
5	5	8	7	$5=30$

In even signs the order must be reversed:—

Venus	Mercury	Jupiter	Saturn	Mars
5	7	8	5	$5=30$

The above may be interpreted thus:—

In Mesha, Mithuna and such other Oja (odd) Rasis, the first 5 Thrimssamsas are governed by Mars, the second 5 by Saturn and so on. In Yugma Rasis (even signs) like Vrishabha, Kataka, etc., the first 5 are governed by Venus, the next 5 by Mercury, etc., as mentioned above.

Example 50.—Find the number of the Thrimssamsas occupied by the planets and the Lagna in the Standard Horoscope and the lords of such Thrimssamsas.

Planet	No. of Thrimssamsa	Lord of Thrimssamsa	
Ravi	180° 53' 55"	1st in odd	Kuja
Chandra	311 17 19	12th in odd	Guru
Kuja	229 30 34	20th in even	Guru
Budha	181 31 34	2nd in odd	Kuja
Guru	84 0 49	25th in odd	Budha
Sukra	171 9 56	22nd in even	Sani
Sani	124 22 41	5th in odd	Kuja
Lagna	298 27 0	29th in even	Kuja

127. Khavedamsa.—When a sign is divided into 40 equal parts, each part goes under the name of Khavedamsa, measuring $0^{\circ} 45'$ of arc. There are 480 such divisions in the entire zodiac. In odd signs, the lords of the 40 Khavedamsas are the rulers of the signs counted from Aries onwards, in a regular order, repeating the counting. In even signs the lords are the owners of the signs, counted from Libra in a regular order. Thus in Aries, the lord of the 1st division will be Mars, 13th Mars, 25th Mars, 37th Mars and the 40th Moon.

In Cancer an even sign the lord of the 1st division is Venus (lord of Libra), 13th Venus, 25th Venus, 37th Venus and 40th Saturn. The reckoning is simple and needs no elaboration.

Example 51.—Find the number of the Khavedamsa occupied by the planets and the Lagna in the Standard Horoscope and the lords of such Khavedamsas.

Planet	Its Long.	No. of Khavedamsa	Its Lord
Ravi	$180^{\circ} 53' 55''$	2nd in odd sign	Sukra
Chandra	311 17 19	16th in „ „	Chandra
Kuja	229 30 34	26th in even sign	Kuja
Budha	118 31 34	3rd in odd sign	Budha
Guru	84 0 49	33rd in „ „	Guru
Sukra	171 2 56	29th in even sign	Sani
Sani	124 22 41	6th in odd sign	Budha
Lagna	298 27 0	38th in even sign	Kuja

128. Akshavedamsa.—When a sign is divided into 45 parts, each part measuring $0^{\circ} 40'$ goes under the name of Akshavedamsa. The 45 parts are governed by the lords of the signs counted regularly from Aries, Leo or Sagittarius according as the sign concerned is movable, fixed or common. Thus in Aries, Kuja will be the lord of 1st, 13th, 25th, 37th Akshavedamsa as Aries recurs three times. In Taurus, the Ravi will be the lord of the 1st, 13th, 25th and 37th parts. In Gemini, Guru will be the lord of the 1st, 13th, 25th and 37th parts.

Example 52.—Find the lords of Akshavedamsa occupied by planets and the Lagna in the Standard Horoscope and the lords of such Akshavedamsas.

Planet	Its Long.			No. of Akshavedamsa	Its Lord
Ravi	180°	53'	55"	2nd in Thula	Kuja
Chandra	311	17	19	17th in Kumbha	Budha
Kuja	229	30	34	30th in Vrischika	Guru
Budha	181	31	34	3rd in Thula	Guru
Guru	84	0	49	37th in Mithuna	Guru
Sukra	171	9	56	32nd in Kanya	Kuja
Sani	124	22	41	7th in Simha	Sani
Lagna	298	27	0	43rd in Makara	Sukra

129. **Shashtyamsa.**—When a sign is divided into 60 equal parts, each is called a Shashtyamsa, the extent being $0^{\circ} 30'$. Usually in text-books, the planetary lord of a Shashtyamsa is not given but only the Deity governing the amsa. For the information of readers, we shall give both in this article.

Rejecting the sign multiply the longitude of a planet by 2. Divide the product by 12. The remainder *plus* 1, counted from the sign position of the planet, represents the Shashtyamsa Rasi, the ruler of which is the Shashtyamsa lord. The Product *plus* 1 (counted in regular or reverse order according as the sign occupied by the planet is odd or even) denotes the particular Shashtyamsa according to the table given below.

In case of odd signs, the 60 Shashtyamsas are :—

- (1) Ghora, (2) Rakshasa, (3) Devabhaga,
- (4) Kubera, (5) Rakshogana, (6) Kinnara,
- (7) Hrusta, (8) Kalagnana, (9) Garala,
- (10) Aganighatha, (11) Mayamsa, (12)
- Preta Puriha, (13) Apampathy, (14)
- Devaganasa, (15) Kala, (16) Sarpa, (17)
- Amritha, (18) Chandra, (19) Mridwamsa
- (20) Komalamsha, (21) Padma, (22)

Lakshmisa, (23) Vageesa, (24) Digambara, (25) Devamsa, (26) Indra, (27) Kali-nasa, (28) Kshitiswara, (29) Kamalakara, (30) Mandatmaja, (31) Mrityu, (32) Kala, (33) Davagnya, (34) Chora, (35) Yamakantaka, (36) Satya, (37) Amritha, (38) Paripurna, (39) Vishapradagdha, (40) Kulanasa, (41) Mukhya, (42) Vamsakshaya, (43) Ootpatha, (44) Kalarupa, (45) Soumya, (46) Mrudvamsa, (47) Susithala, (48) Damshtra, (49) Seethabja, (50) Indumukha, (51) Poorna, (52) Kalagnya, (53) Dandayudha, (54) Nir-mala, (55) Shubha, (56) Ashubha, (57) Atishubha, (58) Sudhapayodhi, (59) Dhyumani, (60) Indurekha.

In case of even signs, the order of naming must be reversed.

Take for example Jupiter. He occupies $23^{\circ} 35'$ of Gemini. Rejecting the sign and multiplying the longitude we get $47^{\circ} 10'$ as product. Dividing this by 12, the remainder is 11. The remainder plus one ($11+1=12$) counted from Gemini (the sign held by Jupiter) represents Taurus. Hence Jupiter's Shashtyamsa sign is Taurus and Shashtyamsa lord is Venus.

Now the product *plus* 1 ($47 + 1 = 48$) counted in direct order (Gemini is an odd sign) gives Damshtramsa.

130. Other Amsas.—For the information of readers, we propose to give some more divisional reckonings which are employed by some astrologers for studying certain aspects of the horoscope. These divisions are not included by Parasara in what he calls the shodasamsas or 16 types of divisions. We shall briefly describe (1) Panchamsa, (2) Shashtyamsa, (3) Ekadasamsa and (4) Nadi Amsa.

131. Panchamsa.—Each Panchamsa— $1/5$ th of a sign is 6° in extent, i.e., the zodiac is divided into 60 Panchamsas. In odd signs the first Panchamsa is governed by Mars; the second by Saturn; the third by Jupiter; the fourth by Mercury; and the fifth by Venus. The reverse holds good in even signs.

132. Shashtamsa.—There are 72 shashtamsas in the whole of the Bhachakra. Each shashtamsa is equal to five degrees and a rasi is divided into 6 shashtamsas. In odd signs the lords of the six shashtamsas are the lords of the six houses from Aries and in even signs the lords of the six shash-tamsas are the lords of the six rasis from Libra.

133. Ashtamsa.—An Ashtamsa measures $3^{\circ} 45'$ and the Bhachakra is divided into 96 Ashtamsas and each rasi, therefore, contains eight compartments—Ashtamsas. In movable signs (Aries, Cancer, etc.), the lords of the 8 Ashtamsas are the lords of the 8 signs from Aries. In Sthira Rasis or immovable signs (Taurus, Leo, etc.,) the lords of the 8 Ashtamsas are those of Leo and succeeding signs. In Dwiswabhava Rasis (common signs like Gemini, Virgo, etc, the 8 Ashtamsas are governed by the lords of Dhanus and the next 8 succeeding signs.

134. Ekadasamsa.—Each Ekadasamsa measures $\frac{30}{11}^{\circ} = 2^{\circ} 43\frac{1}{11}'$ or the Bhachakra contains 132 Ekadasamsas. The lords of the 11 Ekadasamsas are the lords of the eleven signs from the 12th rasi, counted backwards. Thus in Aries the first Ekadasamsa is ruled by Jupiter, the lord of the 12th from it and so on.

135. Nadi Amsa.—Each sign or Rasi is divided into 150 parts so that each part comes under the name of a Nadi Amsa measuring 12 minutes of arc. This minute division sets the seed of the destiny of an individual. If the correct Nadi Amsa is established, then there is a bird's eye view

of the entire past and future of the person concerned. In fact Satyacharya says that in the absence of the correct Nadi Amsa, the time of birth cannot be decided accurately.

I give below the names of the 150 Nadi Amsas. They are :—

1 Vasudha	25 Mudgara	49 Kamadruk
2 Vaishnavi	26 Pasa	50 Kravirani
3 Brahmi	27 Champaka	51 Gahana
4 Kalakuta	28 Damini	52 Kuttini
5 Sankari	29 Mahi	53 Roudri
6 Sudhakari	30 Kalusha	54 Vishakhya
7 Sama	31 Kamala	55 Vishanasini
8 Soumya	32 Kantha	56 Narmada
9 Sura	33 Kala	57 Seetala
10 Maya	34 Karikara	58 Nimna
11 Manohara	35 Kshama	59 Preetha
12 Madhvi	36 Durdhura	60 Priya-
13 Manju-	37 Durbhaga	vardhini
swana	38 Vishwa	61 Managni
14 Ghora	39 Vishirna	62 Durbhaga
15 Kumbhini	40 Vikala	63 Chitra
16 Kutila	41 Vila	64 Chitrini
17 Prabha	42 Vibhrama	65 Chiranjivini
18 Para	43 Sukhada	66 Bhoopa
19 Payaswini	44 Snigda	67 Gadahari
20 Mala	45 Sodari	68 Nala
21 Jagadhi	46 Surasundari	69 Nalini
22 Jarjhara	47 Amritapla-	70 Nirmala
23 Dhruva	vini	71 Nadi
24 Musala	48 Kahala	72 Sudha

73	Amrutamsa-	100	Nisachari	126	Ishani
	kalika	101	Nivriti	127	Shoolini
74	Palakshan-	102	Nikadha	128	Roudri
	kura	103	Sara	129	Shiva
75	Trailokya	104	Samaga	130	Shivakari
76	Mohanakari	105	Samada	131	Kala
77	Mahaduti	106	Kshama	132	Kunda
78	Suseethala	107	Viswam-	133	Mukunda
79	Sukhada		bara	134	Varada
80	Suprabha	108	Kumari	135	Bhasitha
81	Sobha	109	Kokila	136	Kandari
82	Subhada	110	Kunjani-	137	Smara
83	Sobhana		kriti	138	Preetha
84	Sivada	111	Swadha	139	Kokilalapa
85	Asiva	112	Vahini	140	Naga
86	Bhala	113	Jalaplava	141	Kamini
87	Jwala	114	Varuni	142	Kalashod-
88	Gadha	115	Madira		bhava
89	Gaya	116	Maitri	143	Veera-
90	Nootana	117	Haruni		prasoo
91	Sumanohari	118	Harini	144	Sagaracha
92	Somavalli	119	Maruth	145	Satayagna
93	Somalata	120	Dhanan-	146	Satavari
94	Mangala		jaya	147	Sragvi
95	Mudrika	121	Dhanakari	148	Patalini
96	Kshudra	122	Dhanada	149	Pankaja
97	Melapaga	123	Kachapam	150	Parames-
98	Visvalaya	124	Kali		wari
99	Navaneetha	125	Booja		

In movable signs, the count is direct and in fixed signs the count is reverse, i.e., the 150th

amsa becomes first. In common signs the count is from the 76th amsa. This means the first Nadi Amsa in a common sign will be the 76th in the order given above.

For example, ascendant is Gemini, $16^{\circ} 40'$. As 30° is to 150° , so is $16^{\circ} 40'$ to x —the number of passed Nadi Amsas. $x + 1$ will be the Nadi Amsa. Hence $x=83$. The Nadi Amsa will be the 84th. Since Gemini is a common sign the count must start from the 76th in the above list. The 84th Nadi Amsa in Gemini will be Sura.

136. General Remarks.—We have said above that of all the Shodasavargas, it is the Saptavargas (Art. 109) alone that are of special importance to us as contributing to the positional strength (Sthanabala) of the different planets. The Saptavargas of planets, together with the lord of the Saptavargas can be tabulated as follows for our future use. Their importance and applicability has been elaborately explained in my book *Graha and Bhava Balas*.

Example 53.—Tabulate all the Saptavargas of the planets and the Lagna in the Standard Horoscope.

Table of Saptavargas

Planet	Its Symbol	Rasi	Hora	Drekkana	Saptamsa	Navamsa	Dwadasamsa	Thrimsamsa
Ravi	○	॥	॥	॥	॥	॥	॥	॥
Chandra	☽	Sukra	Ravi	Sukra	Sukra	Sukra	Sukra	Kuja
Kuja	♂	Sani	Ravi	Budha	Kuja	Sani	Budha	Guru
Budha	♀	Kuja	Ravi	Guru	Budha	Guru	Budha	Guru
Guru	☿	Sukra	Ravi	Sukra	Sukra	Sukra	Sukra	Kuja
Sukra	☿	Budha	Chan.	Sani	Kuja	Sukra	Guru	Budha
Sani	☽	Budha	Ravi	Sukra	Chan.	Chan.	Sukra	Sani
Lagna	Ascrt. ♈	Ravi	Ravi	Ravi	Budha	Sukra	Budha	Kuja
		Sani	Ravi	Budha	Sani	Budha	Guru	Kuja

137. Interpretation of Saptavarga Table.—

Rows horizontal indicate the planets and rows longitudinal—the vargas. Take for instance, the row under the heading Drekkana. Tracing downwards we find the lords of Drekkana occupied by each planet and the names of the Drekkanas. For instance, take the Sun, and tracing horizontally we find under the column rasi the symbols ☽ and ♀. This means that the Sun is in Thula (Libra) Rasi having Sukra as the lord. The table must be similarly interpreted with reference to other planets.

TABLE I

Charakhandas

Latitude	Vighatis	Vighatis	Vighatis
1°	2.10	1.68	0.73
2	4.20	3.36	1.40
3	6.30	5.04	2.10
4	8.40	6.72	2.80
5	10.50	8.40	3.50
6	12.60	10.08	4.20
7	14.70	11.76	4.90
8	16.90	13.52	5.63
9	19.00	15.20	6.33
10	21.20	16.96	7.06
11	23.30	18.64	7.76
12	25.50	20.40	8.50
13	27.00	21.70	8.80
14	29.90	23.92	9.96
15	32.10	25.68	10.70
16	34.40	27.52	11.46
17	36.60	29.28	12.20
18	39.00	31.20	13.00
19	41.30	33.04	13.76
20	43.70	34.96	14.56
21	46.00	38.80	15.33
22	48.50	40.80	16.26
23	50.90	40.72	16.96
24	53.40	42.72	17.80
25	55.90	44.2	18.63
26	58.50	46.80	19.50
27	61.10	48.88	20.36
28	63.80	50.04	21.26
29	66.50	53.20	22.16
30	69.30	55.44	23.10
31	72.10	57.68	24.33

Latitude	Vighatis	Vighatis	Vighatis
32	75.00	60.00	25.00
33	77.90	62.32	25.96
34	80.90	64.72	6.296
35	84.00	67.20	28.00
36	87.10	69.68	29.03
37	90.40	72.32	30.13
38	93.70	74.96	31.23
39	97.20	77.76	32.04
40	100.60	80.48	33.53
41	104.30	83.44	34.73
42	108.00	86.40	36.00
43	111.90	89.52	37.30
44	115.80	92.64	38.60
45	120.00	96.00	40.00
46	124.20	99.36	41.40
47	128.70	102.96	42.90
48	133.30	106.64	44.43
49	138.00	110.40	46.00
50	143.00	114.40	47.66
51	148.20	118.56	49.40
52	153.50	122.83	51.17
53	159.20	127.36	53.06
54	165.20	132.16	55.06
55	171.30	137.04	57.10
56	177.90	142.32	59.30
57	184.60	147.84	61.60
58	192.00	153.60	64.00
59	199.70	159.76	66.56
60	207.80	166.24	69.26

TABLE II

Terrestrial Latitudes and Longitudes

Name of Place	Name of Country	Latitude	Longitude
Aberdeen	Scotland	.... 57° 10 N.	2° 5' W.
Abyssinia State	Africa	.... 10 0 N.	40 0 E.
Abu Mount	India	.... 24 30 N.	62 30 E.
Achin	Sumatra	.... 5 0 N.	96 30 E.
Aden	Arabia	.... 13 0 N.	45 0 E.
Adoni	India	.... 15 28 N.	77 15 E.
Agin Court	France	.... 53 29 N.	2 9 E.
Agra	India	.... 27 10 N.	77 52 E.
Ahmedabad	India	.... 23 2 N.	72 19 E.
Ahmednagar	India	.... 19 1 N.	74 52 E.
Aix-la-Chapelle	Germany	.... 50 46 N.	6 2 E.
Ajaccio	France	.... 41 55 N.	8 44 E.
Ajmer	India	.... 26 32 N.	74 41 E.
Ajanta	India	.... 20 31 N.	78 19 E.
Akyab	Burma	.... 20 18 N.	92 45 E.
Alleppey	India	.... 9 30 N.	76 13 E.
Alighar	India	.... 27 52 N.	79 0 E.
Alaska	N. America	.... 65 0 N.	150 0 W.
Alexandria	Egypt	.... 31 12 N.	30 10 E.
Algiers	N.Africa	.... 36 35 N.	25 45 E.
Allahabad	India	.... 25 26 N.	81 48 E.
Almora	India	.... 29 40 N.	79 40 E.
Alwar	India	.... 27 40 N.	77 28 E.
Amarapur	Burma	.... 2 50 N.	96 2 E.
Ambala	India	.... 30 28 N.	76 50 E.
Amraoti	India (C.P.)	.... 20 50 N.	78 0 E.
Amraoti	India (Deccan).	16 34 N.	80 25 E.
Amritsar	India	.... 31 39 N.	74 47 E.

Name of Place	Name of Country	Latitude	Longitude
Amsterdam	Netherlands	52° 22' N.	4° 53' E.
Amona	Italy	43 28 N.	13 32 E.
Ananthapur	India	14 40 N.	77 39 N.
Andaman	India	12 0 N.	92 45 E. (Island)
Antwerp	Belgium	51 13 N.	4 24 E.
Anuradhapura	Ceylon	8 26 N.	80 20 E.
Arakan	Burma	20 46 N.	93 12 E.
Arabia (Country)	Asia	24 0 N.	48 0 E.
Aravali (Hills) .	India	26 0 N.	74 0 E.
Arcot	India	12 55 N.	79 20 E.
Argentina	S. America	36 0 S.	65 0 W.
Armenia (State)	Asia	40 30 N.	44 30 E.
Attock	India	33 55 N.	72 20 E.
Asia Minor	Asia	30 0 N.	32 0 E.
Assam(Prov.)....	India	20 13 N.	75 40 E.
Athens	Greece	38 0 N.	23 45 E.
Atlanta	U.S.A.	33 53 N.	84 19 W.
Augsburg	Germany	48 18 N.	10 53 E.
Aurangabad	India	19 53 N.	72 22 E.
Austria(State) .	Europe	47 0 N.	14 0 E.
Australia		25 0 S.	135 0 E.
Babylon	Mesopotamia....	32 30 N.	44 35 E.
Bagdad	Mesopotamia....	33 29 N.	44 31 E.
Bahama Is.	West Indies	23 0 N.	74 0 W.
Baharein Is.	Persian Gulf....	26 0 N.	50 35 E.
Balasore	India	21 31 N.	87 0 E.
Balsar	India	20 35 N.	73 5 E.
Baltic Sea	Europe	57 0 N.	18 0 E.
Baltimore	Ireland	51 28 N.	9 19 W.

LATITUDES AND LONGITUDES

157

Name of Place	Name of Country	Latitude	Longitude
Baltimore	U.S.A.	... 39° 35' N.	76° 36' W.
Baluchistan	Asia (State)	... 28 4' N,	65 0 E.
Banda	India	... 25 28 N.	80 22 E.
Bangalore	India	... 13 0 N.	77 35 E.
Bangkok	Siam	... 14 0 N,	96 15 E.
Bareilly	India	... 28 26 N.	79 25 E.
Bavanahotte	India	... 22 18 N.	86 10 E.
Burdwan	India	... 23 14 N.	87 55 E.
Barbados	W. Indies	... 13 40 N.	59 50 W.
Baroda	India	... 22 20 N,	73 0 E.
Batavia	Java	... 6 0 N.	106 58 E.
Bath	England	... 51 22 N.	2 23 W.
Bavaria (State) .	Germany	... 48 48 N.	12 0 E.
Belgaum	India	... 15 51 N,	74 30 E.
Belgium (State). Europe		... 51 0 N.	4 30 E.
Belgrade	Yugoslavia	... 44 57 N.	20 37 E.
Bellary	India	... 15 11 N.	76 55 E.
Belur	India	... 12 55 N.	76 35 E.
Banares	India	... 25 20 N.	83 1 E.
Bengal (Prov.)	India	... 24 0 N,	87 30 E.
Berar (Prov)....	India	... 20 35 N.	77 0 E.
Barbara	(Brit. Somali- land)	10 25 N.	46 0 E.
Berhampur	India (Ganjam)	... 19 20 N.	84 55 E.
Berhampur	India (Bengal)	... 24 6 N.	88 20 E.
Bezwada	India	... 16 40 N.	81 0 E.
Berlin	Germany	... 52 31 N...	13 24 E.

158 A MANUAL OF HINDU ASTROLOGY

Name of Place		Name of Country	Latitude	Longitude
Bethlehem	...	Palestine	31° 41' N.	35° 15' E.
Bhagalpru	....	India	25 20 N.	87 0 E.
Bhopal	....	India	23 15 N.	77 23 E.
Bhutan (State)		Asia	27 30 N.	90 30 E.
Bharatpur	....	India	27 28 N.	77 10 E.
Bhuj	....	India	23 12 N.	68 2 E.
Bikaneer	....	India	28 0 N.	73 22 E.
Bidar	....	India	17 53 N.	77 50 E.
Bijnour	....	India	29 26 N.	78 10 E.
Bijapur	....	India	16 50 N.	75 47 E.
Bismark	....	U.S.A.	46 50 N.	100 50 W.
Bombay	....	India	18 54 N.	72 49 E.
Boordere	....	India	25 25 N.	76 0 E.
Boston	....	England	53 0 N.	0 2 W.
Brindisi	....	Italy	40 39 N.	17 56 E.
Brunswick	....	Germany	52 15 N.	10 22 E.
Bucharest	....	Rumania	44 25 N.	26 2 E.
Bushire	....	Persia	29 0 N.	50 50 E
Cairo	....	Egypt	30 2 N.	31 40 E.
Calais	....	France	50 57 N.	1 51 E.
Calcutta	....	India	22 40 N.	88 30 E.
Calicut	....	India	11 15 N.	75 51 E.
Cambridge	....	England	52 12 N.	0 8 E.
Cantebury	....	England	51 16 N.	1 4 E.
Canton	....	China	23 25 N.	113 32 E.
Cape Town	....	C. of G. Hope	33 59 S.	18 25 E.
Chandranagore		India	22 50 N.	88 20 E.
Cawnpur	....	India	26 37 N.	86 10 E.
Charleston	....	United States	32 54 N.	80 0 W.
Chicago	....	United States	41 50 N.	87 35 W.

Name of Place	Name of Country	Latitude	Longitude
Chota Nagpur	India	23° 0 N.	83° 0' E.
Cochin	India	9 43 N.	76 13 E.
Cologne	Germany	50 56 N.	6 58 E.
Colombo	Ceylon	7 0 N.	79 45 E.
Constan-			
tinopole	Turkey	41 1 N.	28 55 E.
Copenhagen	Denmark	55 40 N.	12 34 E.
Corsica, I.	France	42 10 N.	9 0 E.
Costa Rica	Cent. America	10 0 N.	84 0 W.
Croydon	England	51 22 N.	0 6 W.
Croydon	Queensland	18 10 S.	142 0 E.
Cutch	India	23 30 N.	70 0 E.
Dacca	India	23 40 N.	90 30 E.
Dakoth N. St.	U.S.A.	47 0 N.	100 0 W.
Damascus	Syria	33 33 N.	36 18 E.
Darjeeling	India	27 5 N.	88 6 E.
Dartmoor	England	50 38 N.	3 58 W.
Delhi	India	28 58 N.	77 0 E.
Derby	England	52 50 N.	1 28 W.
Devonport	England	50 22 N.	4 12 W.
Dublin	Ireland	53 23 N.	6 15 W.
Dunkrik	France	51 3 N.	2 26 E.
Durban	S. Africa	29 58 S.	30 57 E.
East London	C. of G. Hope	32 58 S.	27 52 E.
Ellichpur	India	21 12 N.	77 8 E.
Emden	Germany	53 22 N.	7 13 E.
Florence	Italy	43 47 N.	11 20 E.
Fyzabad	India	26 44 N.	82 6 E.
Gaya	India	24 45 N.	85 5 E.
Geneva	Italy	44 25 N.	8 59 E.
Ghazni	Afghanistan	33 37 N.	68 17 E.

160 A MANUAL OF HINDU ASTROLOGY

Name of Place		Name of Country		Latitude	Longitude
Gibralter	....	Spain	....	36° 7' N.	5° 21' W.
Glasgow	....	Scotland	....	55 51 N.	4 16 W.
Goa	....	India	....	15 30 N.	73 40 E.
Golconda	....	India	....	17 30 N.	78 2 E.
Greenwich	....	England	....	51 29 N.	0 0 E.
Gwalior	....	India	....	26 22 N.	78 2 E.
Hague	....	Netherlands	....	52 4 N.	4 18 E.
Halifax	....	England	....	53 43 N.	1 52 W.
Hong-kong	....	China	....	22 16 N.	114 9 E.
Hyderabad	....	India	....	17 29 N.	78 30 E.
Hyderabad Sind	Pakistan		....	25 30 N.	68 34 E.
Jaipur	...	India	....	27 4 N.	76 0 E.
Jerusalem	....	Palestine	....	31 45 N.	35 17 E.
Jodhpur	....	India	....	26 17 N.	72 58 E.
Jabbulpore	....	India	....	23 12 N.	79 59 E.
Juggennath	....	India	....	19 59 N.	86 2 E.
Kansas City	....	U.S.A.	....	39 3 N.	94 39 E.
Karachi	....	India	....	25 0 N.	67 3 E.
Karaikal	....	India	....	11 0 N.	79 39 E.
Kobe	....	Japan	....	35 0 N.	135 0 E.
Kolhapur	....	India	....	16 40 N.	74 18 E.
Kumbakonam	India		....	11 0 N.	78 40 E.
Lahore	...	India	....	31 39 N.	74 23 E.
Lancaster	....	England	....	54 3 N.	2 28 E.
Lashkar	....	India	....	26 0 N.	77 0 E.
Leipzig	...	Germany	....	51 20 N.	12 21 E.
London	....	England	....	51 30 N.	0 5 W.
Los Angeles	....	U.S.A.	....	34 20 N.	118 45 W.
Madras	....	India	....	13 4 N.	80 14 E.
Madrid	....	Spain	....	40 25 N.	3 40 W.

Name of Place		Name of Country	Latitude	Longitude
Madura	....	India	....	9° 50' N. 78° 15' E.
Mahe	....	India	....	11 33 N. 75 35 E.
Mandalay	....	Burma	....	22 0 N. 96 15 E.
Manila	....	Philippines	....	14 58 N. 121 0 E.
Mantua	....	Italy	....	45 10 N. 10 48 E.
Masulipatam		India	....	16 15 N. 81 12 E.
Mecca	....	Arabia	....	21 20 N. 40 20 E.
Moscow	....	Russia	....	55 40 N. 37 40 W.
Multan	....	India	....	30 12 N. 71 31 E.
Murshidabad	....	India	....	24 2 N. 88 0 E.
Mysore	....	India	....	12 20 N. 76 38 E.
Naples	....	Italy	....	40 52 N. 14 13 E.
Natal	....	South Africa	....	29 0 S. 30 30 E.
New York	....	United States	41 0 N.	73 55 W.
Nilgiri Hills	....	India	....	11 15 N. 76 30 E.
Olympia	....	Greece	....	37 40 N. 21 20 E.
Ottawa	....	Canada	....	45 12 N. 75 52 W.
Paris	....	France	....	48 50 N. 2 21 E.
Poona	....	India	....	18 32 N. 73 53 E.
Puri	....	India	....	19 59 N. 86 2 E.
Quebec	....	Canada	....	47 0 N. 71 0 W.
Quetta	....	India	....	30 12 N. 67 30 E.
Rio de Janeiro		Brazil	....	22 50 S. 43 44 W.
Saar, R.	....	Germany	....	49 28 N. 6 45 E.
Salt Lake City		U.S.A.	....	40 55 N. 112 0 W.
San Francisco		U.S.A	....	38 0 N. 122 24 W.
Seringapatam		India	....	12 30 N. 76 40 E.
Shanghai	....	China	....	31 28 N. 121 28 E.
Sheffield	....	England	....	53 23 N. 1 27 W.
Shillong	....	India	....	25 31 N. 91 58 E.

Name of Place		Name of Country		Latitude		Longitude
Srinagar	....	India	....	34 14 N.		74 50 E.
Surat	....	India	....	21 2 N.		72 50 E.
Toronto	...	Italy	....	40 28 N.		17 13 E.
Udaipur	....	India	....	24 38 N.		73 35 E.
Waterloo	....	Belgium	....	50 44 N.		4 23 E.

TABLE III
Equation of Time

Date	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
	M.	M.	M.	M.	M.	M.	M.	M.	M.	M	M	M
1.	+ 3	+ 14	+ 13	+ 4	- 3	- 2	+ 3	+ 6	0	- 10	- 16	- 11
2.	4	14	12	4	3	2	4	6	0	10	16	11
3.	4	14	12	4	3	2	4	6	- 1	11	16	10
4.	5	14	12	3	3	2	4	6	1	11	16	10
5.	5	14	12	3	3	2	4	6	1	11	16	10
6.	6	14	12	3	3	2	4	6	1	12	16	10
7.	6	14	12	2	3	1	5	6	1	12	16	9
8.	7	14	11	2	4	1	5	6	2	12	16	9
9.	7	14	11	2	4	1	5	5	2	13	16	8
10.	7	14	11	2	4	1	5	5	3	13	16	7
11.	8	14	10	1	4	1	5	5	3	13	16	7
12.	8	14	10	1	4	1	5	5	3	13	16	7
13.	9	14	10	1	4	0	5	5	4	14	16	7
14.	9	13	10	0	4	0	6	5	4	14	16	6
15.	9	14	9	0	4	0	6	4	5	14	15	5
16.	10	14	9	0	4	0	6	4	5	14	15	5
17.	10	14	9	0	4	0	6	4	5	14	15	4
18.	10	14	8	0	4	+ 1	5	4	6	15	15	4
19.	11	'4	8	1	4	1	6	4	6	15	15	3
20.	11	14	8	1	4	1	6	3	6	15	14	3
21.	11	14	8	1	4	1	6	3	7	i5	14	2
22.	12	14	7	1	4	2	6	3	7	15	14	1
23.	12	13	7	2	3	2	6	3	7	16	14	1
24.	12	13	7	2	3	2	6	2	8	16	13	1
25.	12	13	7	2	3	2	6	2	8	16	13	0
26.	13	13	6	2	3	2	6	2	8	16	13	0
27.	13	13	6	2	3	3	6	2	9	16	13	1
28.	13	13	5	2	3	3	6	1	9	16	12	2
29.	13	13	5	3	3	3	6	1	9	16	12	2
30.	13	13	5	3	3	3	6	1	10	16	12	2
31.	13	13	4	3	3	3	6	0	10	16	12	3

TABLE IV

Table of Standard Times

Place			Fast (+) or Slow (-) of Greenwich h. m. s.	Date of Adoption
Aden	....	....	+ 3 0 0	Recent
Afghanistan	....	....	+ 4 30 0	Recent
Africa :				
Cameroons, Fr. Eq. Africa, Tunisia, Angola, Libya,*				
Nigeria	....	....	+ 1 0 0	Sept. 1905
Egypt*, Sudan, Rhodesia, Nyasaland, Union of				
S. Africa, Mozambique		+	2 0 0	1930
Ethiopia, Kenya, Uganda, Tanganyka, Madagaskar,		+	3 0 0	Recent
Zanzibar Islands....		+	2 45 0	Recent
Algeria*, Morocco, Gold Coast, Ivory Coast, French Sudan, Dahomey*, Togoland, Tangier, Sierra				
Leone	....	....	0 0 0	March 1911
Liberia	....	....	- 0 45 0	Recent
Port Guinea, Rio-de-oro*, French Guinea*, Mauretanic*, Senegal*	....	....	- 1 0 0	"
Leopoldville, Coquilhatville	....	....	+ 1 0 0	"

* Summer Time observed,

Place		Fast (+) or Slow (-) of Greenwich	Date of Adoption
		h. m. s.	
Africa :			
Oriental, Kivu, Kasai,			
Ruanda, Urundi, Katanga	+	2 0 0	Recent
America (U.S.A.) :			
Eastern Time* E.T. ‡	....	- 5 0 0	Nov, 1883
Central Time* C.T.‡	....	- 6 0 0	"
Mountain Time* M.T.‡	....	- 7 0 0	"
Pacific Time* P.T.‡	....	- 8 0 0	"
Alaska :			
Ketchikan to Skagway	....	- 8 0 0	"
Skagway to 141° W.	....	- 9 0 0	"
141° W. to 162 W.	....	- 10 0 0	"
162° W. to Western Tip	....	- 11 0 0	"
America (South) :			
Equador, Columbia, Peru,			
Territory of Arc	....	- 5 0 0	"
Venezuallah	....	- 4 30 0	Recent
Western Brazil, Bolivia,			
Argentina*, Chile	....	- 4 0 0	May 1920
British Guiana &			
Dutch Guiana	....	- 3 45 0	Recent
French Guiana : Paraguay	....	- 4 0 0	"
Uruguay	....	- 3 30 0	May 1920
Eastern Brazil	....	- 3 0 0	Recent

‡War time (+ 1 hr.) 9-2-1942 to 30-9-1945,

*Summer Time observed.

TABLE OF STANDARD TIMES

165

Place		Fast (+) or Slow (-) of Greenwich		Date of Adoption
		h. m. s.		
Australia :				
Victoria, N.S. Wales,				
Queensland, Tasmania	....	+ 10 0 0		Feb. 1895
South Australia, N. Territory	....	+ 9 30 0		"
Wertern Australia	....	+ 8 0 0		"
New Zealand	....	+ 12 0 0		"
Austria : Hungary	....	+ 1 0 0		Oct. 1895
Azores*	...	- 2 0 0		Recent
Ascension Island	....	0 0 0		"
Alentian Islands	....	- 11 0 0		"
Albania	....	+ 1 0 0		"
Bahrein Islands*	....	+ 3 0 0		"
Belgium*	....	0 0 0		"
Bermudas Islands	....	- 4 0 0		"
Borneo Islands	....	+ 8 0 0		Oct. 1904
British Honduras	....	- 6 0 0		"
Bulgaria	...	+ 2 0 0		"
Burma	....	+ 6 30 0		1906
Canada				
Newfoundland	....	3 30 0		Nov. 1883
Atlantic Time. A.T.*	....	- 4 0 0		"
Eastern Time : E.T.*	....	- 5 0 0		"
Central Time : C.T.*	....	- 6 0 0		"

* Summer Time observed.

Place		Fast (+) or Slow (-) of Greenwich	Date Adoption		
			h.	m.	s.
Canada :					
Mountain Time : M.T.*	....	—	7	0	0
Pacific Time : P.T.*	....	—	8	0	0
Canary Islands*	....	—	1	0	0
Cape Verde Islands	....	—	2	0	0
Caroline Islands General	....	+	10	0	0
Kasaie, Pinglepag	....	+	10	0	0
Truk	....	+	11	0	0
Ceylon	....	+	5	30	0
China :					
Kung Lung (Mountain)	....	+	5	30	0
Sinyang (Tibet)	....	+	6	0	0
Lungtsu (Szchu'en)*	....	+	7	0	0
Chung Yuan (Central)					
Hong Kong*	....	+	8	0	0
Chang Pei (Mountain)	....	+	8	30	0
Cocos-Keeling Islands					
(Indian Ocean)	....	+	6	30	0
Cook Islands (Pac. Ocean)	....	+	10	30	0
Corsica Islands (Med. Sea)*	....	+	0	0	0
Costa Rica Isls. (Near Panama)	—	6	0	0	“
Cuba Islands (West Indies)	....	—	5	0	0
Cyprus Islands (Med. Sea)	....	—	2	0	0
Czechoslovakia	....	+	1	0	0

* Summer Time observed.

TABLE STANDARD TIME

167

Place	Fast (+) Slow (-) of Greenwich				Date of Adoption
		h.	m.	s.	
Denmark	.... + 1 0 0				Jan. 1894
Ecuador	.... - 5 0 0				„
England	.... 0 0 0				1880
Estonia : U.S.S.R.*	.... + 2 0 0				Recent
Falkland Islands	.... - 4 0 0				„
Fiji Islands	.... + 12 0 0				„
Finland	.... + 2 0 0				May 1921
Formosa*	.... + 8 0 0				Jan. 1896
Fernando Islands	.... - 2 0 0				Recent
France*	.... 0 0 0				May 1911
Gambia	.... 0 0 0				Recent
Germany	.... + 1 0 0				April 1892
Gibraltar*	.... 0 0 0				„
Greece and Crete	.... + 2 0 0				July 1916
Grenada Islands (W. Indies)	.... - 4 0 0				Recent
Greenland : Scoresby Sound	.... - 2 0 0				„
 Angmagssalik, W. Coast					
excluding Thule	.... - 3 0 0				„
Thule	.... - 4 0 0				„
Guam Islands	.... + 10 0 0				„
Guatemala (N. America)	.... - 6 0 0				1883
Haiti	.... - 5 0 0				Recent
Hawaiian Islands	.... - 10 0 0				„

* Summer Time observed

Place		Fast (+) or Slow (--) of Greenwich	h. m. s.	Date of Adoption
Honduras (Near Panama)	—	6 0 0	Recent
Hungary	+	1 0 0	May 1892
Iceland*	—	1 0 0	Jan. 1906
India : General‡	+	5 30 0	1-1-1906
Calcutta (L.M.T.)	+	5 53 0	
Indo-China : Cambodia,				upto 1-10-1941
Laos, Vietnam	+	7 0 0	1904
Indonesia : Sumatra (North)	+	6 30 0	Recent
Sumatra (South)	+	7 0 0	"
Java, Borneo (Indonesia)	+	7 30 0	"
Celebes	+	8 0 0	"
Molucca Islands	+	8 30 0	"
Iraq	+	3 0 0	"
Ireland*	+	0 0 0	Oct. 1915
Israel*	+	2 0 0	Recent
Italy (and Sicily)	+	1 0 0	Nov. 1893
Japan	+	9 0 0	Ist Jan. 1888
Jordan	+	2 0 0	Recent
Kamaran Islands	+	3 0 0	"
Korean Democratic Republic				
(North)	+	8 30 0	"
Korea (South)*	+	8 30 0	Dec. 1904
Kuweit (Persian Gulf)	+	3 0 0	Recent
Latvia* (U.S.S.R.)	+	2 0 0	"
Lebanon (Malayan Archi.)	+	2 0 0	"

* Summer Time observed.

‡ War time (+ 1 hr.) 1-9-1942 to 15-10-1945.

TABLE OF STANDARD TIMES

169

Place	Fast (+) or Slow (-) of Greenwich			Date of Adoption	
		h.	m.		
Lithuania	+	1	0	0
Luxemburg	+	1	0	0
Madagascar	+	3	0	0
Madeire* (Brazil)	-	1	0	0
Malaya (See footnote)	+	7	30	0
Malta Islands	+	1	0	0
Mauritius Islands	+	4	0	0
Mexico :					
Central Time C.T.	-	6	0	0
Mountain Time M.T.	-	7	0	0
Pacific Time P.T.	+	8	0	0
Marianne Islands	+	9	0	0
Marqueass Islands	-	10	0	0
Martinique Islands	-	4	0	0
Monaco		0	0	0
Mozambique	+	2	0	0
Netherlands*		0	0	0
Netherlands Guinea	-	3	40	0
New Caledonia	+	11	0	0
Newfoundland	-	3	30	0
New Cuinea (British)	+	10	0	0
(Netherland)	+	9	30	0
New Herbrides	+	11	0	0

* Summer Time observed,

Malaya : Upto 31-12-1932 : + 7 hrs.

 , 31- 8-1941 : + 7/20 hrs.

Now : + 7/30 hrs.

Place		Fast (+) or Slow (-) of Greenwich	Date of Adoption		
			h.	m.	s.
New Zealand	....	+ 12 0 0	Recent		
Nicaragua	....	- 5 45 0	"		
Norfolkland	....	+ 11 30 0	"		
Norway	....	+ 1 0 0	Jan. 1895		
Oman	....	+ 3 30 0	Recent		
Pakistan Eastern	....	+ 5 0 0	Oct. 1951		
", Western	....	+ 6 0 0	"		
Panama Canal Zone	....	- 5 0 0	1911		
Papua	....	+ 10 0 0	Recent		
Persia	....	+ 3 30 0	"		
Peseaderes Islands	....	+ 8 0 0	"		
Philippine Islands	....	+ 8 0 0	May 1899		
Poland*	....	+ 2 0 0	Sept. 1919		
Portugal*	....	0 0 0	1911	.	
Princess Islands	....	0 0 0	"		
Puerto Rico	....	- 4 0 0	"		
Reunion Islands	....	+ 4 0 0	"		
Roumania	....	+ 2 0 0	"		
St. Lucia	....	- 4 0 0	"		
St. Pierre	....	- 4 0 0	"		
St. Thomas Islands	....	G.M.T.	"		
St. Vineent Islands	....	- 4 0 0	"		
Salvador	....	- 6 0 0	"		
Samoan Islands	....	- 11 0 0	"		
Sandwich Islands	....	G.M.T.	"		
Sarawak	....	+ 8 0 0	"		

* Summer Time observed.

TABLE OF STANDARD TIMES

171

Place		Fast (+) or Slow (-) of Greenwich	Date of Adoption
			h. m. s.
Sardinia	....	+ 1 0 0	Recent
Saudi Arabia except Dhahran	....	+ 3 0 0	"
Dhahran*	....	+ 4 0 0	"
Scotland	....	G.M.T.	1880
Siam (Thailand)	....	+ 7 0 0	April 1920
Solomon Islands	....	+ 11 0 0	Recent
Somaliland	....	+ 3 0 0	"
Serbia	....	+ 1 0 0	"
Seychells Islands	....	+ 4 0 0	"
Spain*	....	G.M.T.	Jan. 1901
Spanish Guinea*	....	G.M.T.	Recent
Society Islands	....	- 10 0 0	"
Sweden	....	+ 1 0 0	"
Switzerland	....	+ 1 0 0	June. 1894
Syria*	....	+ 2 0 0	Recent
Tahiti	....	- 10 0 0	"
Tonga (Friendly Islands)	....	+ 12 20 0	"
Tunisia	....	+ 1 0 0	"
Tasmania	....	+ 10 0 0	"
Turkey	....	+ 2 0 0	"
U.S.S.R.			
Moscow, Ukrain & West	....	+ 2 0 0	"
Black Sea to Caspian Sea*	....	+ 3 0 0	"
Sverdlovsk, West Kazak*	....	+ 4 0 0	"
Omsk, East Kazak*	....	+ 5 0 0	"
Krasnoyarsk, New Syberia*	....	+ 6 0 0	"

* Summer Time observed.

		Fast (+) or Slow (-) of	Date of Adoption
		Greenwich	
		h. m. s.	
U.S.S.R. :			
Irkutsk*	....	+ 7 0 0	Recent
Yakutsk, Chitinsk*	....	+ 8 0 9	"
Khabarovsk, Vladivostok*	....	+ 9 0 0	"
Magadan, Sakalin Islands*	....	+ 10 0 9	"
Peiropavlosvsk,			
Kamchatsiky*	....	+ 11 0 0	"
Anadyr	....	+ 12 0 0	"
Vatican Islands	....	+ 1 0 0	"
West Indies. Barbados,			
Guadeloupe, Leeward Isls.			
Martinique, Tobago,			
Trinidad, Windward Isls.	....	- 4 0 0	"
Curacao	....	- 4 30, 0	"
Dominican Republic	....	- 5 0 0	"
Bahamas, Jamaica	....	- 5 0 0	"
Wales		G.M.T.	1880
Yugoslovakia	....	+ 1 0 0	Recent
Yokon	....	- 9 0 0	Aug. 1910

The Summer Time Bill lays down the following rule :—

“ The period of Summer Time shall be the period beginning at two o'clock, Greenwich mean time, in the morning of the day next following the THIRD SATURDAY IN APRIL, or if that day is Easter Day, the day next following the Second Saturday in April, and ending at two o'clock, Greenwich mean time, in the morning of the day next following the THIRD SATURDAY IN SEPTEMBER ”

The Bill will not be permanent but will be renewable annually.

* Summer Time observed.

TABLE V

Sunrise and Sunset

LATITUDE		SUNRISE									NORTHERN		
	Date	0°	10°	20°	30°	35°	40°	45°	50°	55°	60°		
January	5	6 1	6 18	6 36	6 57	7 9	7 22	7 38	7 58	8 24	9 1		
	10	6 4	6 20	6 37	6 57	7 9	7 22	7 38	7 57	8 22	8 56		
	15	6 6	6 21	6 38	6 57	7 3	7 21	7 36	7 54	8 18	8 50		
	20	6 7	6 22	6 38	6 56	7 6	7 18	7 32	7 49	8 11	8 42		
	25	6 9	6 23	6 38	6 54	7 4	7 15	7 28	7 44	8 4	8 32		
	30	6 10	6 23	6 36	6 52	7 1	7 12	7 24	7 38	7 56	8 21		
February	5	6 10	6 22	6 35	6 49	6 57	7 6	7 17	7 30	7 45	8 2		
	10	6 11	6 21	6 32	5 45	6 52	7 0	7 10	7 22	7 36	7 55		
	15	6 11	6 20	6 30	6 41	6 47	6 54	7 3	7 13	7 25	7 41		
	20	6 10	6 19	6 27	6 36	6 42	6 48	6 55	7 4	7 14	7 28		
	25	6 10	6 17	6 24	6 32	6 36	6 41	6 47	6 54	7 2	7 14		
March	1	6 9	6 15	6 21	6 27	6 31	6 35	6 40	6 46	6 53	7 2		
	5	6 8	6 13	6 18	6 23	6 26	6 29	6 33	6 38	6 43	6 50		
	10	6 7	6 10	6 14	6 17	6 19	6 21	6 24	6 27	6 30	6 35		
	15	6 6	6 8	6 9	6 11	6 12	6 14	6 15	6 16	6 18	6 20		
	20	6 4	6 5	6 5	6 5	6 5	6 5	6 5	6 5	6 5	6 5		
	25	6 3	6 2	6 1	5 59	5 58	5 57	5 56	5 54	5 52	5 50		
April	30	6 2	5 59	5 56	5 53	5 51	5 49	5 47	5 44	5 40	5 35		
	5	6 0	5 56	5 51	5 46	5 43	5 40	5 35	5 30	5 25	5 17		
	10	5 58	5 53	5 47	5 41	5 36	5 32	5 26	5 20	5 12	5 2		
	15	5 57	5 50	5 43	5 34	5 30	5 24	5 17	5 10	5 0	4 47		
	20	5 56	5 48	5 39	5 29	5 23	5 16	5 9	4 59	4 47	4 32		
	25	5 55	5 45	5 35	5 24	5 17	5 10	5 0	4 50	4 36	4 18		
May	30	5 54	5 43	5 32	5 19	5 11	5 3	4 52	4 40	4 24	4 4		
	5	5 53	5 42	5 29	5 15	5 6	4 57	4 45	4 31	4 14	3 50		
	10	5 53	5 40	5 26	5 11	5 1	4 51	4 38	4 23	4 3	3 37		
	15	5 53	5 39	5 24	5 7	4 57	4 46	4 32	4 16	3 54	3 25		
	20	5 53	5 38	5 22	5 4	4 54	4 41	4 27	4 9	3 45	3 13		
	25	5 53	5 38	5 21	5 2	4 50	4 38	4 22	4 3	3 38	3 3		
June	30	5 54	5 38	5 20	5 0	4 48	4 35	4 18	3 58	3 31	2 54		
	5	5 54	5 38	5 20	4 59	4 46	4 32	4 15	3 54	3 25	2 45		
	10	5 55	5 38	5 20	4 58	4 45	4 31	4-13	3 51	3 22	2 40		
	15	5 56	5 39	5 20	4 58	4 45	4 30	4 12	3 50	3 20	2 36		
	20	5 57	5 40	5 21	4 59	4 46	4 31	4 13	3 50	3 19	2 35		
	25	5 58	5 41	5 22	5 0	4 47	4 32	4 14	3 51	3 21	2 36		
	30	6 0	5 42	5 23	5 1	4 48	4 34	4 16	3 53	3 23	2 40		

LOCAL MEAN TIME

SUNRISE

LATITUDE		NORTHERN											
Date	0°	10°	20°	30°	35°	40°	45	50°	55°	60°			
July	5	6 0	5 43	5 25	5 3	4 51	4 36	4 19	3 57	3 28	2 45		
	10	6 1	5 45	5 27	5 6	4 53	4 39	4 22	4 1	3 32	2 52		
	15	6 2	5 46	5 28	5 8	4 56	4 43	4 26	4 6	3 39	3 1		
	20	6 2	5 47	5 30	5 11	5 0	4 46	4 31	4 12	3 46	3 11		
	25	6 3	5 43	5 32	5 14	5 3	4 51	4 36	4 18	3 44	3 22		
	30	6 3	5 49	5 34	5 17	5 7	4 55	4 42	4 25	4 3	3 33		
August	5	6 2	5 50	5 36	5 20	5 11	5 1	4 48	4 33	4 13	3 47		
	10	6 2	5 50	5 38	5 24	5 15	5 6	4 54	4 40	4 23	3 59		
	15	6 1	5 51	5 40	5 26	5 19	5 10	5 0	4 48	4 32	4 11		
	20	6 0	5 51	5 41	5 29	5 23	5 15	5 6	4 55	4 41	4 23		
	25	5 59	5 51	5 42	5 32	5 26	5 20	5 12	5 3	4 50	4 35		
	30	5 58	5 51	5 44	5 35	5 30	5 24	5 18	5 10	5 0	4 47		
September	5	5 56	5 50	5 45	5 38	5 34	5 30	5 25	5 19	5 12	5 2		
	10	5 54	5 50	5 46	5 41	5 38	5 35	5 31	5 26	5 20	5 13		
	15	5 52	5 50	5 47	5 44	5 42	5 40	5 37	5 34	5 30	5 25		
	20	5 50	5 49	5 48	5 46	5 46	5 44	5 48	5 41	5 40	5 37		
	25	5 49	5 49	5 49	5 49	5 49	5 49	5 49	5 49	5 49	5 40		
	30	5 47	5 49	5 50	5 52	5 53	5 54	5 55	5 57	5 58	6 0		
October	5	5 46	5 48	5 52	5 55	5 57	5 59	6 1	6 4	6 8	6 12		
	10	5 44	5 48	5 53	5 58	6 1	6 4	6 8	6 12	6 17	6 24		
	15	5 43	5 48	5 54	6 1	6 5	6 9	6 14	6 20	6 27	6 36		
	20	5 42	5 49	5 56	6 4	6 9	6 14	6 21	6 28	6 37	6 49		
	25	5 41	5 50	5 58	6 8	6 14	6 20	6 28	6 36	6 47	7 2		
	30	5 40	5 50	6 0	6 12	6 18	6 26	6 34	6 44	6 57	7 14		
November	5	5 40	5 51	6 3	6 16	6 24	6 32	6 42	6 54	7 9	7 30		
	10	5 40	5 53	6 6	6 20	6 29	6 38	6 49	7 3	7 20	7 42		
	15	5 41	5 54	6 8	6 24	6 34	6 44	6 56	7 11	7 30	7 55		
	20	5 42	5 56	6 11	6 28	6 38	6 50	7 3	7 19	7 40	8 8		
	25	5 43	5 58	6 14	6 33	6 43	6 55	7 9	7 27	7 49	8 20		
	30	5 45	6 1	6 18	6 37	6 48	7 1	7 16	7 34	7 57	8 31		
December	5	5 47	6 3	6 21	6 41	6 42	7 6	7 21	7 41	8 6	8 42		
	10	5 49	6 6	6 24	6 44	6 56	7 10	7 27	7 46	8 13	8 49		
	15	5 51	6 8	6 27	6 48	7 0	7 14	7 31	7 51	8 18	8 56		
	20	5 54	6 11	6 30	6 51	7 3	7 17	7 34	7 55	8 22	9 1		
	25	5 56	6 13	6 32	6 53	7 6	7 20	7 37	7 57	8 24	9 4		
	30	5 58	6 16	6 34	6 55	7 8	7 22	7 38	7 59	8 26	9 4		

LOCAL MEAN TIME

TABLE OF SUNSET

175

SUNSET

LATITUDE

NORTHERN

Date	0°	10°	20°	30°	35°	40°	45°	50°	55°	60°	
January	5	18 9	17 52	17 34	17 14	17 2	16 48	16 32	16 12	15 46	15 10
	10	18 11	17 55	17 38	17 18	17 6	16 53	16 38	16 18	15 54	15 19
	15	18 13	17 57	17 41	17 22	17 11	16 58	16 43	16 25	16 1	15 30
	20	18 14	18 0	17 44	17 26	17 16	17 4	16 50	16 33	16 11	15 41
	25	18 16	18 2	17 47	17 30	17 21	17 10	16 57	16 41	16 21	15 54
	30	18 17	18 4	17 50	17 35	17 26	17 16	17 4	16 49	16 31	16 6
February	5	18 18	18 6	17 54	17 40	17 32	17 23	17 12	17 0	16 43	16 21
	10	18 18	18 8	17 56	17 44	17 37	17 20	17 19	17 8	16 54	16 35
	15	18 18	18 8	17 59	17 48	17 42	17 35	17 26	17 17	17 4	16 49
	20	18 17	18 10	18 1	17 52	17 47	17 41	17 34	17 25	17 15	17 2
	25	18 17	18 10	18 3	17 56	17 51	17 46	17 40	17 34	17 25	17 14
	1	18 16	18 10	18 5	17 58	17 55	17 51	17 46	17 40	17 33	17 25
March	5	18 15	18 11	18 6	18 1	17 58	17 55	17 51	17 47	17 41	17 35
	10	18 14	18 11	18 8	18 4	18 2	18 0	17 58	17 55	17 51	17 47
	15	18 13	18 11	18 10	18 8	18 7	18 6	18 5	18 3	18 1	18 0
	20	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 12	18 12
	25	18 10	18 11	18 12	18 14	18 15	18 16	18 17	18 19	18 22	18 24
	30	18 8	18 11	18 14	18 17	18 19	18 21	18 24	18 27	18 31	18 36
April	5	18 6	18 10	18 15	18 20	18 24	18 27	18 31	18 36	18 42	18 51
	10	18 5	18 10	18 16	18 24	18 28	18 32	18 38	18 44	18 52	19 3
	15	18 4	18 10	18 18	18 26	18 32	18 37	18 44	18 52	19 2	19 15
	20	18 2	18 11	18 19	18 30	18 36	18 42	18 50	19 0	19 11	19 28
	25	18 2	18 11	18 21	18 33	18 40	18 47	18 57	19 8	19 21	19 40
	30	18 1	18 11	18 25	18 36	18 44	18 52	19 3	19 15	19 31	19 52
May	5	18 0	18 12	18 25	18 39	18 48	18 57	19 9	19 23	19 41	20 5
	10	18 0	18 13	18 26	18 42	18 52	19 2	19 15	19 30	19 51	20 17
	15	18 0	18 14	18 28	18 46	18 56	19 7	19 21	19 38	19 59	20 29
	20	18 0	18 15	18 30	18 49	19 0	19 12	19 26	19 44	20 9	20 40
	25	18 0	18 16	18 32	18 52	19 3	19 16	19 32	19 51	20 16	20 52
	30	18 1	18 17	18 34	18 55	19 7	19 20	19 36	19 57	20 23	21 2
June	5	18 2	18 18	18 37	18 58	19 10	19 24	19 42	20 3	20 31	21 12
	10	18 3	18 20	18 38	19 0	19 13	19 29	19 45	20 7	20 36	21 19
	15	18 4	18 21	18 40	19 2	19 15	19 30	19 48	20 10	20 40	21 24
	20	18 5	18 22	18 41	19 4	19 17	19 32	19 50	20 12	20 43	22 27
	25	18 6	18 24	18 42	19 4	19 18	19 32	19 50	20 13	20 43	21 28
	30	18 7	18 24	18 43	19 5	19 18	19 33	19 50	20 13	20 44	21 26

LOCAL MEAN TIME

SUNSET

LATITUDE

NORTHERN

Date	0°	10°	20°	30°	35°	40°	45°	50°	55°	60°
July	5 18 8	18 25	18 43	19 5	19 18	19 32	19 50	20 11	20 40	21 23
	10 18 9	18 25	18 43	19 4	19 16	19 31	19 48	20 9	20 36	21 17
	15 18 9	18 25	18 43	19 3	19 15	19 28	19 45	20 5	20 31	21 9
	20 18 10	18 25	18 42	19 1	19 12	19 25	19 41	20 0	20 25	21 8
	25 18 10	18 24	18 40	18 58	19 9	19 21	19 36	19 54	20 17	20 50
	0 18 10	18 23	18 38	18 55	19 5	19 17	19 30	19 47	20 9	20 39
August	5 18 9	18 22	18 35	18 51	19 0	19 10	19 23	19 38	19 57	20 23
	10 18 9	18 20	18 32	18 47	18 55	19 5	19 16	19 29	19 47	20 10
	15 18 8	18 18	18 29	18 42	18 50	18 58	19 8	19 20	19 36	19 56
	20 18 7	18 16	18 26	18 37	18 44	18 51	19 0	19 11	19 24	19 48
	25 18 6	18 13	18 22	18 32	18 38	18 44	18 52	19 1	19 12	19 22
	30 18 4	18 10	18 18	18 26	18 31	18 36	18 43	18 51	19 0	19 13
September	5 18 2	18 7	18 13	18 19	18 23	18 27	18 32	18 38	18 45	18 55
	10 18 0	18 4	18 8	18 13	18 16	18 19	18 22	18 27	18 32	18 40
	15 17 59	18 1	18 4	18 7	18 9	18 11	18 13	18 16	18 20	18 25
	20 17 57	17 58	17 59	18 0	18 1	18 2	18 4	18 5	18 6	18 9
	25 17 55	17 55	17 54	17 54	17 54	17 54	17 54	17 54	17 54	17 54
	30 17 54	17 52	17 50	17 48	17 47	17 46	17 44	17 43	17 42	17 39
October	5 17 52	17 49	17 46	17 42	17 40	17 38	17 35	17 32	17 28	17 24
	10 17 50	17 46	17 41	17 36	17 33	17 30	17 26	17 22	17 16	17 9
	15 17 49	17 43	17 37	17 30	17 25	17 22	17 17	17 11	17 4	16 54
	20 17 48	17 41	17 34	17 25	17 20	17 15	17 8	17 1	16 52	16 49
	25 17 48	17 32	17 30	17 20	17 14	17 8	17 0	16 51	16 40	16 26
	30 17 47	17 37	17 27	17 16	17 9	17 2	16 53	16 42	16 29	16 12
November	5 17 47	17 36	17 24	17 11	17 8	16 54	16 44	16 32	16 16	15 56
	10 17 48	17 33	17 22	17 7	16 59	16 49	16 38	16 24	16 7	15 45
	15 17 48	17 35	17 20	17 4	16 55	16 45	16 32	16 17	15 58	15 33
	20 17 49	17 35	17 20	17 2	16 52	16 41	16 28	16 11	15 50	15 22
	25 17 51	17 35	17 19	17 1	16 50	16 38	16 24	16 6	15 44	15 13
	30 17 52	17 36	17 19	17 0	16 49	16 36	16 21	16 2	15 38	15 1
December	5 17 54	17 38	17 20	17 0	16 48	16 35	16 19	16 0	15 35	14 59
	10 17 56	17 39	17 21	17 0	16 43	16 35	16 18	15 58	15 32	14 55
	15 17 58	17 41	17 23	17 2	16 50	16 36	16 19	15 58	15 31	14 53
	20 18 1	17 44	17 25	17 4	16 51	16 37	16 20	16 0	15 32	14 33
	25 18 3	17 46	17 28	17 6	16 54	16 40	16 23	16 2	15 34	14 56
	30 18 6	17 49	17 30	17 9	16 57	16 43	16 26	16 6	15 39	15 1

LOCAL MEAN TIME

TABLE VI
Lords of Vargas

LORDS OF RASIS OR SIGNS

No.	Sign	English Names	Symbol	Ruler
1	Mesha	Aries	♈	Kuja
2	Vrishabha	Taurus	♉	Sukra
3	Mithuna	Gemini	♊	Budha
4	Kataka	Cancer	♋	Chandra
5	Simha	Leo	♌	Ravi
6	Kanya	Virgo	♍	Budha
7	Thula	Libra	♎	Sukra
8	Vrischika	Scorpio	♏	Kuja
9	Dhanus	Sagittarius	♐	Guru
10	Makara	Capricorn	♑	Sani
11	Kumbha	Aquarius	♒	Sani
12	Meena	Pisces	♓	Guru

LORDS OF HORA

No.	Hora	1st	2nd
	Degrees	15°	30°
1	Sign	Ruler	Ruler
1	Mesha	Ravi	Chandra
2	Vrishabha	Chandra	Ravi
3	Mithuna	Ravi	Chandra
4	Kataka	Chandra	Ravi
5	Simha	Ravi	Chandra
6	Kanya	Chandra	Ravi
7	Thula	Ravi	Chandra
8	Vrischika	Chandra	Ravi
9	Dhanus	Ravi	Chandra
10	Makara	Chandra	Ravi
11	Kumbha	Ravi	Chandra
12	Meena	Chandra	Ravi

LORDS OF DREKKANA

Drekkana	....	1st	2nd	3rd
Degrees	....	10°	20°	30°
No.	Sign	Ruler	Ruler	Ruler
1	Mesha	Kuja	Ravi	Guru
2	Vrishabha	Sukra	Budha	Sani
3	Mithuna	Budha	Sukra	Sani
4	Kataka	Chandra	Kuja	Guru
5	Simha	Ravi	Guru	Kuja
6	Kanya	Budha	Sani	Sukra
7	Thula	Sukra	Sani	Budha
8	Vrischika	Kuja	Guru	Chandra
9	Dhanus	Guru	Kuja	Ravi
10	Makara	Sani	Sukra	Budha
11	Kumbha	Sani	Budha	Sukra
12	Meena	Guru	Chandra	Kuja

LORDS SAPTHAMSA

Sapthamsa....	1st	2nd	3rd	4th	5th	6th	7th
Degrees	4°	8°	12°	17°	21°	25°	30°
Minutes	17'	34'	51'	8"	25'	42'	0"
Seconds	8"	17"	25"	34"	42"	51"	0"
No.	Sign	Rulers					
1	Mesha	Ku.	Su.	Bu.	Ch.	Ra.	Bu.
2	Vrishabha	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
3	Mithuna	Bu.	Ch.	Ra.	Bu.	Su.	Ku.

Lords of Sapthamsa (*Continued*)

No.	Sign	Rulers						
		1st	2nd	3rd	4th	5th	6th	7th
4	Kataka	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
5	Simha	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.
6	Kanya	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.
7	Thula	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
8	Vrischika	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.
9	Dhanus	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.
10	Makara	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.
11	Kumbha	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.
12	Meena	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.

LORDS OF NAVAMSA

Navamsa	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Degrees	3°	6°	10°	13°	16°	20°	23°	26°	30°
Minutes	20'	40'	0'	20'	40'	0'	20'	40'	0'

No.	Sign.	Rulers						
1	Mesh	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.
2	Vrishabha	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
3	Mithuna	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
4	Kataka	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.
5	Simha	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.
6	Kanya	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
7	Thula	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
8	Vrischika	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.
9	Dhanus	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.
10	Makara	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
11	Kumbha	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
12	Meena	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.

LORDS OF DASAMSA

Dasamsa Degrees	1st 3°	2nd 6°	3rd 9°	4th 12°	5th 15°	6th 18°	7th 21°	8th 24°	9th 27°	10th 30°
No. Sign	Rulers									
1 Mesh	Ku.	Sa.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.
2 Vrishabha	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.
3 Mithuna	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.
4 Kataka	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu
5 Simha	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.
6 Kanya	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.
7 Thula	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
8 Vrischika	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
9 Dhanus	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.
10 Makara	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.
11 Kumbha	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.
12 Meena	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su	Bu.	Ch.	Ra.

LORDS OF DWADASAMSA

Dwadasamsa Degrees Minutes	1st 2° 30'	2nd 5° 0'	3rd 7° 30'	4th 10° 0'	5th 12° 30'	6th 15° 0'	7th 17° 30'	8th 20° 0'	9th 22° 30'	10th 25° 0'	11th 27° 30'	12th 30° 0'
No. Sign	Rulers											
1 Mesh	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.
2 Vrishabha	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.
3 Mithuna	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.
4 Kataka	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.
5 Simha	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.
6 Kanya	Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.
7 Thula	Su.	Kn.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.
8 Vrischika	Ku.	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.
9 Dhanus	Gu.	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.
10 Makara	Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.
11 Kumbha	Sa.	Gu.	Ku.	Sn.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.
12 Meena	Gu.	Ku.	Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Gu.	Sa.	Sa.

LORDS OF SHODASAMSA

No.	Sign	Rulers	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th
1	Mesh	Kuja Suk. Bud. Ch. Ra. Bu.	Sa.	Gu.	Kuja	Suk.	Bud.	Ch.										
2	Vrishabha	Ravi Bud. Suk. Ku. Gu. Sa.	Bu.	Ch.	Ravi	Bud.	Suk.	Kuja										
3	Mithuna	Guru Suni Suni Gu. Ku. Su.	Bu.	Ch.	Ra.	Bu.												
4	Kataka	Kuja Suk. Bud. Ch. Ra. Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Kuja	Suk.	Bud.	Ch.						
5	Simha	Ravi Bud. Suk. Ku. Gu. Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ravi	Bud.	Suk.	Kuju						
6	Kanya	Guru Sani Sani Gu. Ku. Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Guru	Sani	Sani	Guru						
7	Thula	Kuja Suk. Bud. Ch. Ra. Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Kuja	Suk.	Bud.	Ch.						
8	Vrischika	Ravi Bud. Suk. Ku. Gu. Sa.	Sa.	Gu.	Ku.	Su.	Bu.	Ch.	Ravi	Bud.	Suk.	Kuja						
9	Dhanus	Guru Sani Sani. Gu. Ku. Su.	Bu.	Ch.	Ra.	Bu.	Su.	Ku.	Guru	Sani	Sani	Guru						
10	Makara	Kuja Suk. Bud. Ch. Ra. Bu.	Su.	Ku.	Gu.	Sa.	Sa.	Gu.	Kuja	Suk.	Bud.	Ch.						
11	Kumbha	Rau Bud. Sok. Ku. Gu. Sa.	Sa.	Gn.	Ku.	Sa.	Sa.	Gu.	Kuja	Suk.	Bud.	Ch.						
12	Meena	Guru Sani Sani Gu. Ku. Su.	Bu.	Ch.	Ra.	Bn.	Sa.	Ku.	Guru	Sani	Sani	Guru						

An Index of Technical Terms

Adi	First
Adhikamasa	Intercalary month
Ahas	Diurnal duration
Akshamsa	Terrestrial Latitude
Angaraka	Mars
Antva	Last
Apamandala	Ecliptic
Apasavya	Sinistral or anti-clockwise
Apoklima	Succedent house
Aprakashaka grahas	Shadowy planets
Arambha	Beginning
Arambha-sandhi	The starting point of division of a sign
Ashtamsa	
Ashuddha Rasi	The sign that cannot be subtracted
Asta	Combustion
Asta Lagna	Descendant
Asu	Equivalent to 4 sec. of Sidereal Time
Athichara	Acceleration
Ayanamsa	Precessional distance
Ayu	Longevity
Ayurbhava	Eighth house
Bhachakra	Zodiac
Bhagana	Revolution of planets
Bhaskaracharya	A Great Hindu Astronomer
Bhava	House
Bhavachakra	Table of Houses
Bhava-madhya	Mid-point of the house
Bhava-sandhi	Cusp of the house
Bhava-sphuta	Determining longitudes of houses

Bhogya	To pass, e.g., time to pass
Bhogyamsa	Arc to gain
Bhratru	Brother
Bhratrubhava	Third house
Bhuja	Distance from the nearest Equinoctial
Bhuktha	Gained, e.g. Time gained
Bhukthamsas	Arc gained
Bhramana	Planetary Rotation
<i>Brihat Jataka</i>	A work on Horoscopy by Varahamihira
Budha	Mercury
Chakra	Diagram, map
Chandra	The Moon
Chandramana	Lunar month
Chara	Variable
Charakhanda	Ascensional difference
Chara Rasis	Movable signs
Chaturthamsa	$\frac{1}{4}$ division of a sign
Dakshina	South
Dakshina Gola	South (celestial) hemisphere; 180° to
Dasamabhava	Mid-heaven [360° of the zodiac
Dasamsa	$\frac{1}{10}$ division of a sign
Dasavargas	The kinds of division. e.g., of a sign
Dhanabhava	Second house
Dhanus	Sagittarius
Dharmabhava	Ninth house
Duruva	Time of right ascension
Dina	Day, diurnal duration
Dinardha	Half diurnal duration
Drekkana	$\frac{1}{3}$ division of a sign
Dwadasamsa	$\frac{1}{12}$ "

Dwissabhava rasis	Common signs
Ekadasamsa	1/11 division of a sign
Ghati	Equivalent to 24 minutes of English Hemisphere [Time]
Gola	Hemisphere
Graha	Planet
Graha Sphuta	Determining planetary longitudes
Guru	Jupiter
Hora	1/12 division of a sign
Ishtakala	The given time
Jagatchakshu	The Sun
Kalatra	Wife
Kalatrabhava	Seventh house
Kalidasa	A great Indian Dramatist
Kalpa	4,320,000,000 Sidereal years
Kanya	Virgo
Karaka	Promoter
Karana	Half a lunar day
Karma	Profession
Karma bhava	Tenth house
Kataka	Cancer
Kendra	Quadrant
Kendra bhava	Angular house
Kethu	Dragon's tail
Khanda	Division or Section
Kshepa	Celestial Latitude
Kranti	Declination
Kuja	Mars
Kumbha	Aquarius
Kundali	Diagram, map
Labha bhava	Eleventh house

Lagna	Ascendant
Lagna Sphuta	Longitude of Ascendant
Lipta	A unit of measure of Time or Arc
Madhya	Middle
Madhya Lagna	Mid-heaven
Maharishis	Great Sages of India
Makara	Capricorn
Mandochcha	A celestial force
Mathamaha	Maternal relations
Mathru	Mother
Meena	Pisces
Mesha	Aries
Mithuna	Gemini
Mitra	Friend
Moolathrikonas	Positions similar to those of exaltation
Nadi Amsa	$\frac{1}{150}$ division of a sign
Nadi Vritta	Celestial equator
Naisargika	Natural
Nakshatra	Constellation
Nakshatra Dina	Sidereal day
Natha	Meridian-distance
Navamsa	$1/9$ division of a sign
Nirayana	Ex-precession
Oja Rasis	Odd signs
Oochcha	Exaltation
Oopachayas	3, 6, 10, and 11 houses
Pada	Quarter
Panapara	Succedent house
Panchamsa	$1/5$ division of a sign
Panchanga	Almanac
Panchasiddhantika	A Hindu Astronomical work

Para	A unit of measure of Arc or Time
Paratpara	Do.
Paschad	Western
Patha	A celestial force
Pathala Lagna	Lower meridian
Phalit bhaga	Judicial or predictive portion
Pithamaha	Paternal relations
Pithru	Father
Poorvabhaga	Eastern or the first part
Prag	Eastern
Prarupa	A unit of measure of Arc or Time
Prustodaya	Rising by hinder part : e.g., signs
Putra	Son Children
Putra bhava	Fifth house
Rahu	Dragon's head
Rasathala Lagna	Lower meridian
Rasi	A zodiacal sign
Rasi chakra	Zodiacal diagram
Rasi mana	Time of oblique ascension
Rasi kundali	Zodiacal diagram
Sama	Neutral
Sandhi	Junctionol point
Sani	Saturn
Saptha varga	Seven kinds of division
Satru	Enemy
Satru bhava	Sixth house
Sauramana	Solar month
Savana Dina	Apparent solar day
Savya	Dextral
Sayana	With Precession
Seeghrochcha	A celestial force

Shadvargas	Six kinds of division
Shashtamsa	1/6 division of a sign
Shashtyamsa	1/60 division of a sign
Shodasamsa	1/16 division of a sign
Simha	Leo
Sirodaya	Rising by the head : e.g., signs
Spashta	Planetary or house longitude
Sthanabala	Positional strength
Sthira rasis	Fixed signs
Sukha bhava	Fourth house
Sukra	Venus
Sunya	Zero
Surya	Sun
Surya Siddhantha	A Hindu Astronomical work
Suryodayadi Janana	Ghatis elapsed from sunrise to birth
kala ghatikaha	
Tatkalika	Temporary
Tatpara	A unit of measure of Arc or Time
Thanubhava	First house
Thithi	Luni-Solar day
Thrimsamsa	$\frac{1}{30}$ division of a sign
Thula	Libra
Thrikona	Trine
Ubhayodaya	Rising both by head and hinder part:
Udaya	Rising [e.g., sign
Udaya Lagna	Ascendant
Unnatha	30 ghati diminished by Natha
Uttara	North
Uttarabhaga	Second Part
Uttara Gola	North (celestial) hemisphere 0° to 180° of the zodiac

Vakra	Retrograde
Varahamihira	A great Indian writer
Varga	Manner of division
Vighati	Equivalent to 24 seconds of English Time
Viliptha	A unit of measure of Arc or Time
Virama sandhi	End-point
Virupa	A unit of measure of Arc or Time
Vishavarekha	Terrestrial equator
Varyabhava	Twelfth house
Vrischika	Scorpio
Vrishabha	Taurus
Yugma Rasis	Even signs

Works by B. V. RAMAN

1. **ASTROLOGY FOR BEGINNERS**—Teaches Astrology without effort. The best book for beginners. 15th Edition. Rs. 3-75 or Sh. 7-50.
2. **A MANUAL OF HINDU ASTROLOGY**—Gives a clear and concise account of the essential principles of Astrology. 9th Edition. Rs. 8-25 or Sh. 16-50 *Postage extra.*
3. **BHAVARTHA RATNAKARA**—English Translation with original slokas in Devanagari, exhaustive notes and illustrations. 5th Edition. Rs. 8-25 or Sh. 16-6. *Postage extra.*
4. **GRAHA AND BHAVA BALAS**—A Guide to Predictive Astrology. Cloth bound. 8th Edition. Rs. 4-50 or Sh. 9.
5. **VARSHAPHAL OR THE HINDU PROGRESSED HOROSCOPE**—Gives an easy method for deciphering yearly results scientifically. Full cloth bound. 8th Edition. Rs. 7-50 or Sh. 15.
6. **HOW TO JUDGE A HOROSCOPE**, Vol. I—Deals exhaustively with Practical Astrology. Cloth bound. 6th Edition. Rs. 13-50 or Sh. 27.
7. **AYURYEDA OR THE HINDU SYSTEM OF MEDICINE**—Gives an idea of the grandeur and importance of Ayurveda. 5th Edition. Rs. 2 or Sh. 4.
8. **ASTROLOGY AND MODERN THOUGHT**—The truth of Astrology has been statistically proved. 6th Edition. Rs. 20 or £ 2. *Postage extra.*
9. **STUDIES IN JAIMINI ASTROLOGY**—Presents the complicated principles contained in the four chapters of Jaipini in a simple, comprehensive manner with suitable illustrations. 3rd Edition. Rs. 6-50 or Sh. 13.
10. **NOTABLE HOROSCOPES**—Contains the Horoscopes of Sri Krishna, Buddha, Shankara, Christ, etc. 3rd Edition. Cloth bound. Pp. 464. Rs. 12 or Sh. 24.
11. **ASHTAKAVARGA SYSTEM OF PREDICTION**—The first of its kind on the practical application of Ashtakavarga. 2nd Edition. Rs. 7-50 or Sh. 15.
12. **A HINDU IN AMERICA**—A must for all lovers of Astrology and Indian Culture. Rs. 10/50 or Sh. 21.
13. **MUHURTHA OR ELECTORAL ASTROLOGY**—This book tells how to achieve success in all your undertakings. 4th Edition. Rs. 8-25 or Sh. 17/6.

Ask for an illustrated catalogue.

RAMAN PUBLICATIONS

“ Sri Rajeswari ” : : BANGALORE-20

The Astrological Magazine

The Best Exponent of Indian Science

Founded in 1895 by Prof. B. Suryanarain Rao

Edited by B. V. RAMAN

Published every month and contains the following features:—

(1) Astrology for Beginners. (2) Discussion of eminent horoscopes. (3) Political Forecasts of the trend of national and international events. (4) Finds from Investigations. (5) Articles with illustrations on Astrology, Astronomy, Medicine in relation to Astrology, Phrenology, Palmistry, Yoga, Spiritualism, Graphology, Biology in relation to Astrology and articles of general and scientific interest. (6) Commercial and Market Forecasts. (7) Readers' section dealing with questions put by readers about scientific problems. (8) Hints for Agriculturists. (9) Airways Guide. (10) How is this Month for You? and many other interesting and useful topics.

"To those students who desire to obtain an insight into Hindu Astrology, they cannot do better than subscribing to this excellent publication." — *British Journal of Astrology, London.*

"Free from platitudes, yet deals with many things of intense human interest." — *W. B. Crow, D.Sc., Ph.D. in Proteus, London.*

"Contains a number of interesting contributions devoted to discussions of different topics...the Journal is pledged to a vindication of the scientific status of Astrology." — *The Hindu, Madras.*

.....Magazine of great interest." — *Times of Ceylon.*

Annual Subs. Rs. 18-25 Single Copy Rs. 1-50 + 2 Ps.

RAMAN PUBLICATIONS
" Sri Rajeswari ", BANGALORE-20

त्रिलोक भवन देव वैदानि विद्वांस्य

श्रीरामानन्द

जगन्नाथ कलाक... | ०३१

रामाक... ००० ००० ००० ००० ००० ००० ००० ००० ०००

IMPORTANT BOOKS

(All are in English unless otherwise stated)

BY

Prof. B. SURYANARAIN RAO

FEMALE HOROSCOPY

This book describes and exemplifies the full method of working the horoscopes of women.
7th Edition. Rs. 6 or Sh. 12.

JAIMINI SUTRAS

English Translation. A most scientific system of astrology which entirely departs from the conventional methods. This is a book the
which has never been published before.
4th Cloth Bound (In print).

RAMAN PUBLICATIONS

'Sri Rajeswari', BANGALORE-20 (India)

The Astrological Magazine

The Best Exponent of Indian Science

Founded in 1895 by Prof. B. Suryanarain Rao

Edited by B. V. RAMAN

Published every month and contains the following features:—

(1) Astrology for Beginners. (2) Discussion of eminent horoscopes. (3) Political Forecasts of the trend of national and international events. (4) Finds from Investigations. (5) Articles with illustrations on Astrology, Astronomy, Medicine in relation to Astrology, Phrenology, Palmistry, Yoga, Spiritualism, Graphology, Biology in relation to Astrology and articles of general and scientific interest. (6) Commercial and Market Forecasts. (7) Readers' section dealing with questions put by readers about scientific problems. (8) Hints for Agriculturists. (9) Airways Guide. (10) How is this Month for You? and many other interesting and useful topics.

"To those students who desire to obtain an insight into Hindu Astrology, they cannot do better than subscribing to this excellent publication." — *British Journal of Astrology, London.*

"Free from platitudes, yet deals with many things of intense human interest." — *W. B. Crow, D.Sc., Ph.D. in Proteus, London.*

"Contains a number of interesting contributions devoted to discussions of different topics...the Journal is pledged to a vindication of the scientific status of Astrology." — *The Hindu, Madras.*

.....Magazine of great interest." — *Times of Ceylon.*

Annual Subs. Rs. 18-25 Single Copy Rs. 1-50 + 2 Ps.

RAMAN PUBLICATIONS

"*Sri Rajeswari*", : BANGALORE-20